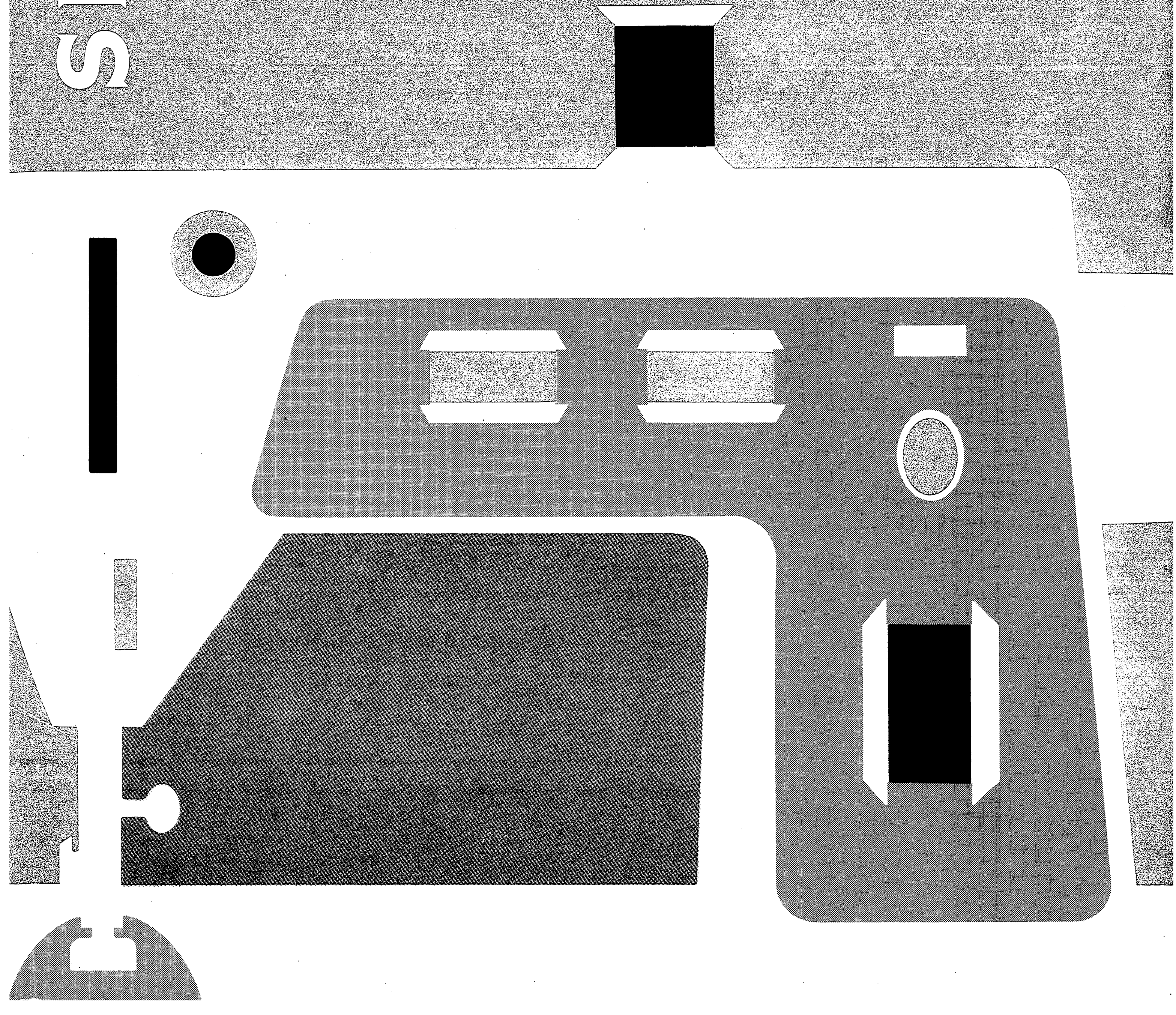
SINGER

instructions

Graduate

Convertible-bed Zig-Zag & Stretch Sewing Machine
Model 6705



Graduate

Zig-Zag & Stretch Sewing Machine by SINGER

Congratulations . . .

The new *Graduate** Zig-Zag & Stretch Sewing Machine (Model 6705) you are about to use will take you into a wonderful new world of sewing. The Model 6705 *Flip & Sew** sewing machine, features a hinged bed for free arm sewing, and you will also enjoy:

- the *simplicity* of dial controls. Now you can simply dial a stitch length, a stitch width, pressure and tension settings; even buttonhole stitching
- *built-in stitch patterns,* which let you produce a straight stitch and a variety of zig-zag patterns by simply turning a dial, plus *Flexi-Stitch** patterns for stitching knit and stretch fabrics and producing intricate stitch designs
- *one-way needle clamp* makes it impossible to insert needle backwards
- *stitch control dial* that lets you switch from regular to stretch stitching
- *guidelines* on both sides of the needle plate, which help you keep seams straight
- *convenient power and light switch* that gives you a choice of two speeds
- *easy needle plate changing* —needle plate secured by magnets is easy to lift out for cleaning
- *three-position presser foot lifter* that lets you place bulky fabric or many fabric layers under the presser foot
- *built-in sewing light* that illuminates the sewing area

Your SINGER sewing machine is the key to your sewing success when used properly. To achieve professional results, SINGER suggests you sit down at your machine and go through this book step by step before you begin to sew. You will discover all the many advantages of sewing with your *Graduate* sewing machine.

Enjoy sewing!

SINGER* Service is always close at hand. If your machine should need servicing, call your local SINGER Sewing Center to be sure of warranted SINGER Parts and Service. You will find the address in the telephone directory under SINGER COMPANY.

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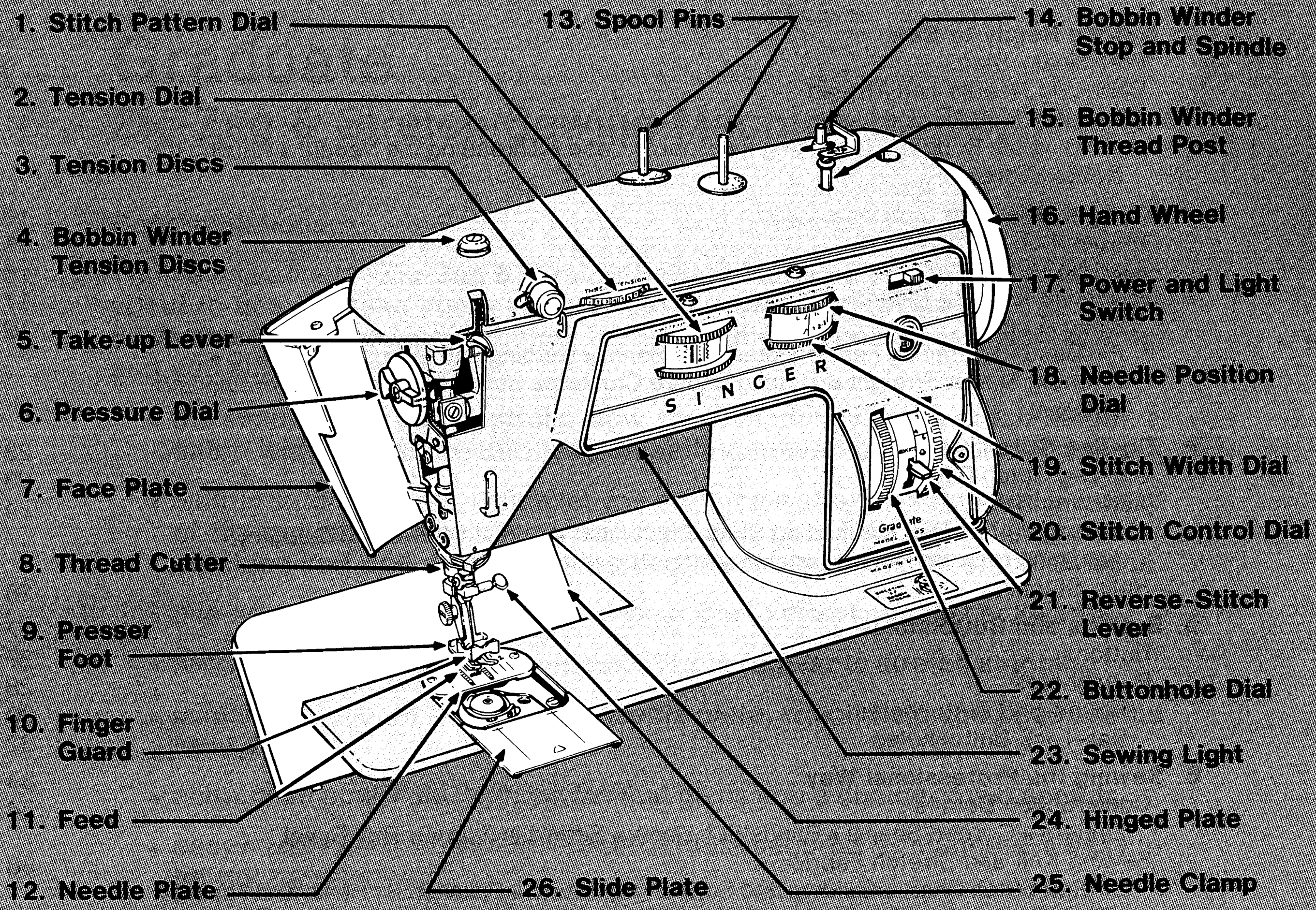
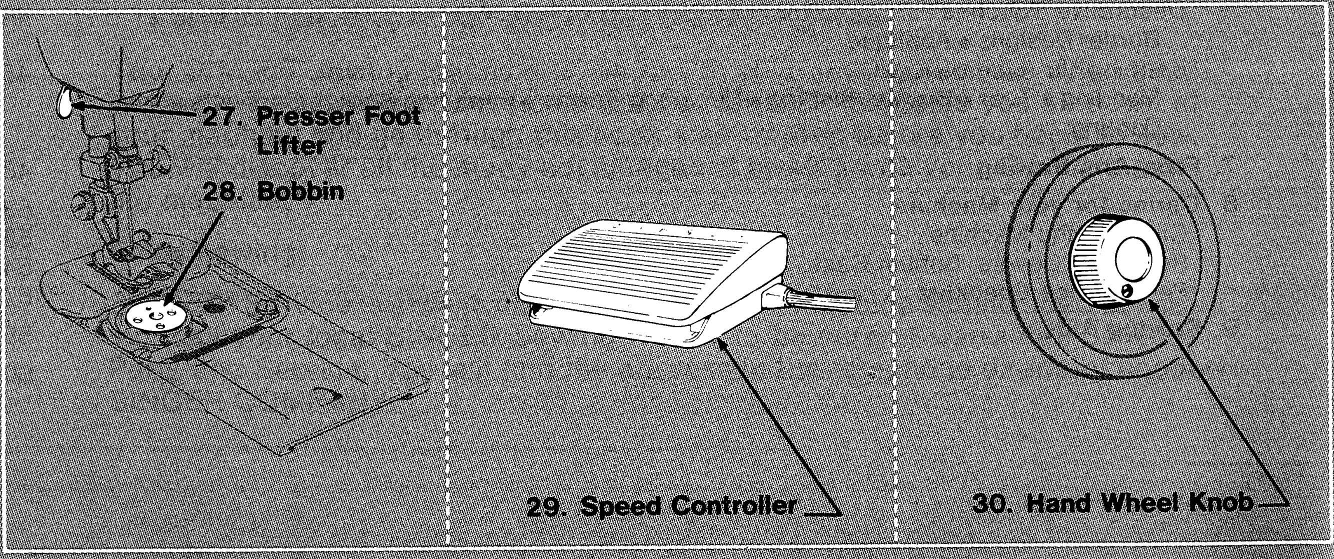
1. GETTING TO KNOW YOUR MACHINE



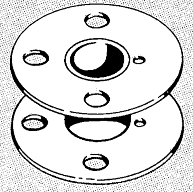
1. Stitch Pattern Dial
2. Tension Dial
3. Tension Discs
4. Bobbin Winder Tension Discs
5. Take-up Lever
6. Pressure Dial
7. Face Plate
8. Thread Cutter
9. Presser Foot
10. Finger Guard
11. Feed
12. Needle Plate
13. Spool Pins
14. Bobbin Winder Stop and Spindle
15. Bobbin Winder Thread Post
16. Hand Wheel
17. Power and Light Switch
18. Needle Position Dial
19. Stitch Width Dial
20. Stitch Control Dial
21. Reverse-Stitch Lever
22. Buttonhole Dial
23. Sewing Light
24. Hinged Plate
25. Needle Clamp
26. Slide Plate
SINGER



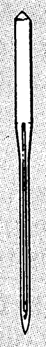
27. Presser Foot Lifter
28. Bobbin
29. Speed Controller
30. Hand Wheel Knob

principal parts and what they do

1. **Stitch Pattern Dial** can be set to produce a smooth straight stitch or a practical (and decorative) zig-zag stitch.
2. **Tension Dial** lets you select just the right tension for your stitch, thread, and fabric. The numbers eliminate guesswork in duplicating settings.
3. **Tension Discs,** controlled by the tension dial, regulate the amount of tension on your needle thread.
4. **Bobbin Winder Tension Discs** regulate thread tension for bobbin winding.
5. **Self-threading Take-up Lever** controls flow of needle thread.
6. **Pressure Dial** regulates presser-foot pressure on fabric. It has an all-purpose sewing setting plus settings for extra-light and extra-heavy pressure and for darning.
7. **Face Plate** unlocks and swings open for access to pressure dial.
8. **Thread Cutter** is built into presser bar for safety and convenience.
9. **Presser Foot** holds fabric against feed.
10. **Finger Guard** is a safety feature to help prevent fingers from accidentally getting in path of needle.
11. **Feed** moves fabric under the presser foot.
12. **Needle Plate,** secured by magnets, lifts out for removal. Guidelines on right and left sides of plate help you keep seams straight.
13. **Spool Pins** hold spools of various sizes for threading machine and winding bobbin.
14. **Bobbin Winder Stop and Spindle** let you fill bobbin quickly and easily.
15. **Bobbin Winder Thread Post** guides the thread when winding the bobbin.
16. **Hand Wheel** controls the movement of the take-up lever and the needle. *Always turn it toward you.*
17. **Power and Light Switch** turns on machine and sewing light simultaneously. **FAST** and **SLOW** speed range settings let you choose the best sewing speed for your work.
18. **Needle Position Dial** places needle in either **L** (left), ▲ (center) or **R** (right) stitching position.
19. **Stitch Width Dial** controls the width of zig-zag stitching and positions the needle for straight stitching.
20. **Stitch Control Dial** allows for a variety of stitch lengths; also has a special stretch setting ⊜ for straight or zig-zag stretch stitching.
21. **Reverse-Stitch Lever** instantly reverses stitching direction at the touch of your finger.
22. **Buttonhole Dial** controls steps in sewing round-end buttonholes. *Dial must be in* OFF *position when not in use.*
23. **Built-in Sewing Light** illuminates sewing area. Pull-down bracket makes it easy to replace bulb.
24. **Hinged Plate** converts machine for free arm sewing.
25. **Needle Clamp** is designed to eliminate the possibility of inserting needle backwards.
26. **Slide Plate,** opens easily, lets you see bobbin. Seam guidelines (extended from needle plate) have crosslines to help you turn square corners.
27. **Presser-Foot Lifter,** at back of machine, allows you to raise and lower presser foot. Extra-high lift position permits easy placement of bulky fabrics.
28. **Bobbin** shows thread supply, is easily removed for winding.
29. **Speed Controller** is designed for your convenience and safety, controls the speed of your machine.
30. **Hand Wheel Knob** engages hand wheel to sewing mechanism. Loosen knob for bobbin winding.

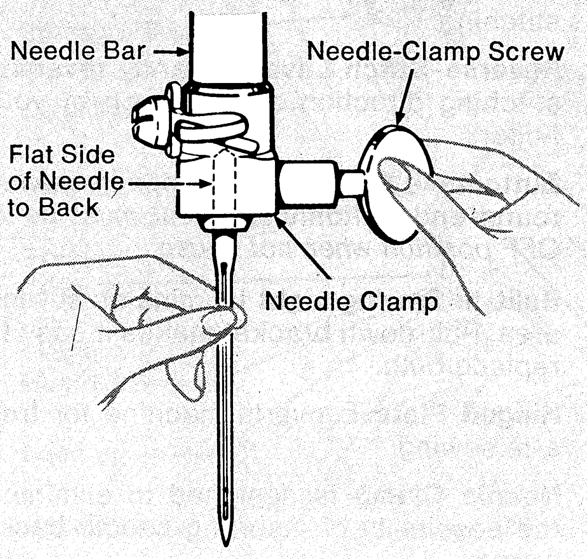


Bobbin
(No. 172222)

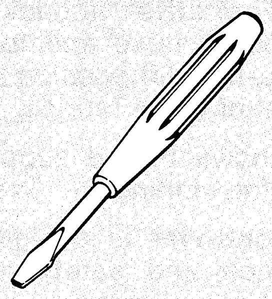


Regular Needle
(Style 2020)

Ball-Point Needle
(Style 2045)



Changing the Needle



Tension Screwdriver

accessories

The following accessories come with your sewing machine.

1. BOBBINS No. 172222

- One drop-in steel bobbin in your machine.
- Extra drop-in steel bobbins with your accessories.

2. NEEDLES

IMPORTANT: Your SINGER* sewing machine has been designed to obtain best results with SINGER* needles. You should follow the recommendations in this instruction book and on the needle package for correct style and size of needle for different types and weights of fabric.

In place in your machine —

- Style 2020 (15x1)

With your accessories —

- Style 2020 (15x1) needles, for all-purpose sewing.
- Style 2045 ball-point *Yellow Band** needles, for sewing synthetic knits and stretch fabrics.

Changing the Needle

The needle clamp has been designed so that the needle can only be inserted with the flat side of the shank toward the back.

1. Raise needle bar to its highest position, loosen needle-clamp screw, and remove needle.
2. Insert new needle in clamp, with the flat side of the needle to the back, and push it up as far as it will go.
3. Tighten needle-clamp screw.

3. TENSION SCREWDRIVER

No. 161295

Designed to fit the bobbin case tension screw, this screwdriver makes adjustment of bobbin-thread tension quick and easy. (For instructions on bobbin-thread tension adjustment, see page 18.

4. GENERAL PURPOSE FOOT No. 172904 AND NEEDLE PLATE No. 383133

The general purpose foot and the general purpose needle plate are in place on your machine. Ideal for all utility sewing, these fittings can be used for either straight or zig-zag stitching. *Always use them together* when alternating between straight and zig-zag stitching.

5. STRAIGHT STITCH FOOT No. 181545 AND NEEDLE PLATE No. 381316

The straight stitch foot and the straight stitch needle plate are used when your fabric or sewing procedure requires close control.

These accessories, recommended for all straight-stitch sewing, are especially helpful for edge stitching and collar pointing, or for stitching delicate or spongy fabrics.

6. ZIPPER FOOT No. 161166

The zipper foot is used for inserting zippers and stitching corded seams.

7. OVEREDGE FOOT No. 163374

Overedge foot used with overedge stretch stitch for seams in stretch fabrics.

8. BUTTONHOLE FOOT No. 381255

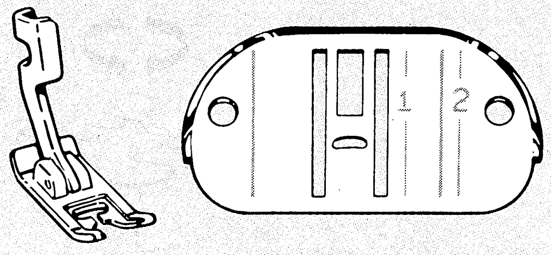
The buttonhole foot is used to make round-end buttonholes.

9. SPECIAL PURPOSE FOOT No. 163483

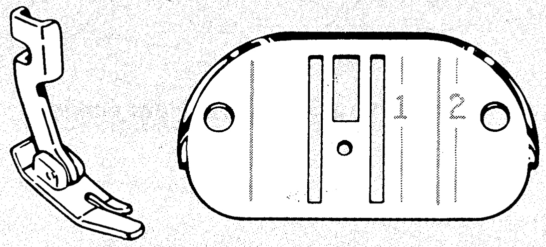
The special purpose foot is used for all kinds of decorative stitching.

10. FEED COVER PLATE No. 171138

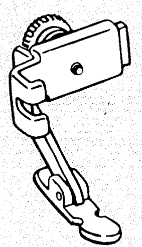
The feed cover plate replaces the needle plate when fabric feeding is not desired. Use it for button sewing (page 27) and free-motion darning (page 47).



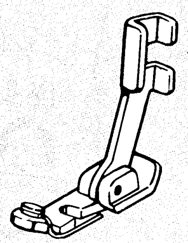
General Purpose Foot and Needle Plate



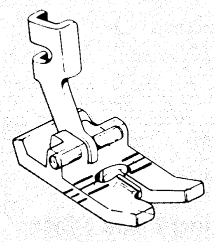
Straight Stitch Foot and Needle Plate



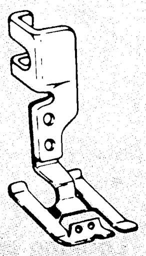
Zipper Foot



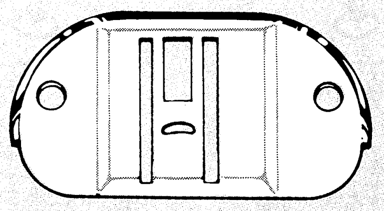
Overedge Foot



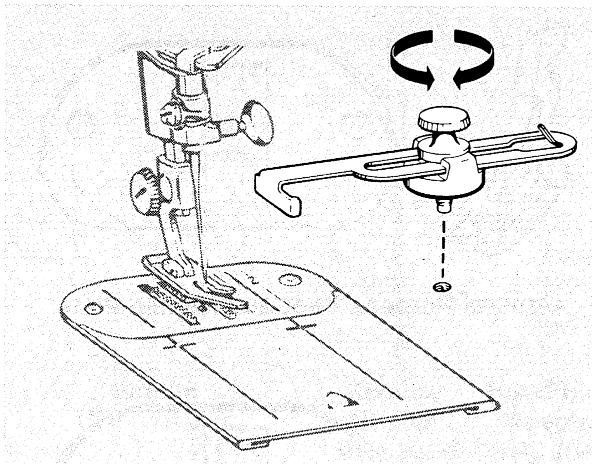
Buttonhole Foot



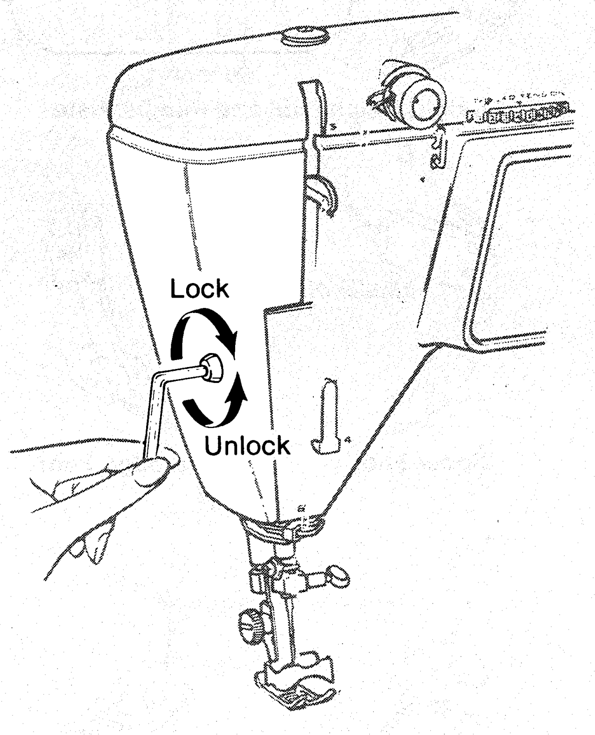
Special Purpose Foot



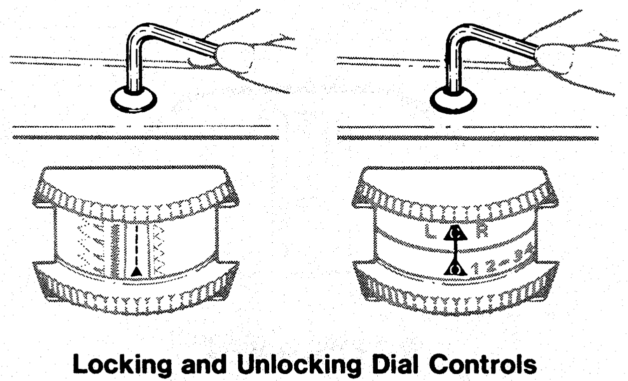
Feed Cover Plate



Attaching Seam and Hem Guide



Locking and Unlocking Face Plate



Locking and Unlocking Dial Controls

11. SEAM AND BLINDSTITCH HEM GUIDE No. 161172

The seam guide will help you to stitch seams of perfectly uniform width. It is especially useful for curved seams or topstitching, when absolute accuracy is required. Also, because it allows you to guide stitches at any distance between 1/8 inch (3mm) and 1-1/4 inches (3.2cm) from fabric edge, it is useful for very narrow or unusually wide seams.

Attaching the Seam Guide

Place screw in hole to the right of the slide plate; line up straight edge of guide with the needle plate guideline for desired seam width, and tighten screw.

12. LOCKING KEY (Large, No. 171387)

The larger of the two locking keys furnished with your accessories is used to unlock the face plate to gain access to the pressure regulating dial and for cleaning and oiling behind the face plate. It is also used to remove the pins that lock the dial controls for straight stitching in center needle position.

To unlock face plate, insert key into locking pin, as illustrated, and unscrew locking pin all the way by turning key counterclockwise. Remove pin and then open face plate.

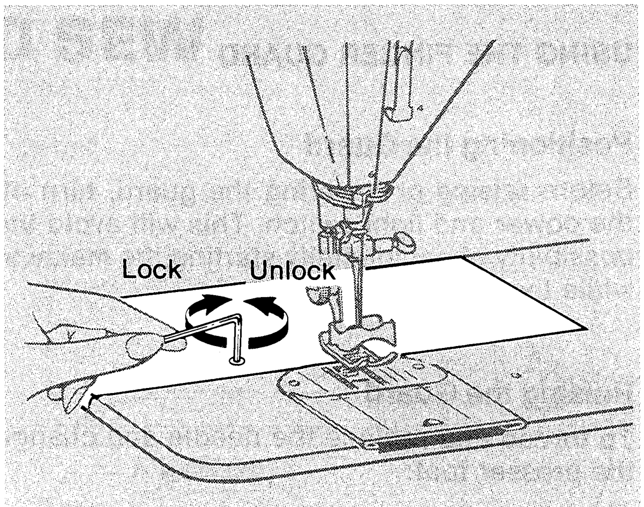
To lock face plate, insert pin through hole in face plate, and close face plate while guiding end of pin into mounting hole in machine casting. Insert key in locking pin and turn key clockwise until pin is firmly secured.

To unlock dial controls, insert key into locking pin and turn key counterclockwise to remove pin.

To lock the machine in straight stitch position, set dials at ▲ , ▲ and ▲ . Insert pins from top through dials and turn key clockwise.

13. LOCKING KEY (Small, No. 381271)

The smaller of the two locking keys furnished with your accessories is used to unlock the hinged plate, to convert machine from flat-bed to free-arm sewing. To unlock plate, insert key into hole in plate and turn key counterclockwise. To lock plate in flat-bed position, turn key clockwise. Refer to page 48 for instructions on converting machine to free-arm sewing.

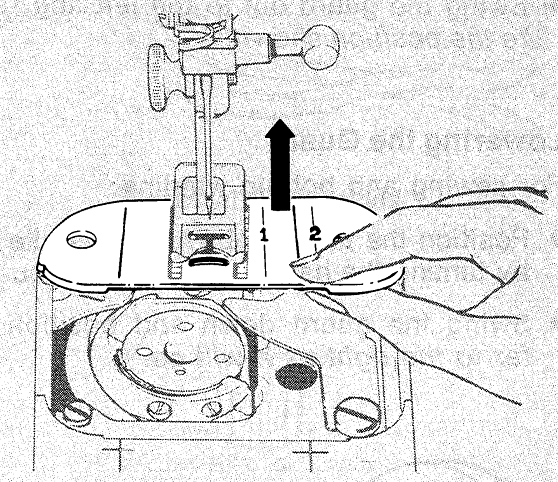


Locking and Unlocking Hinged Plate

CHANGING NEEDLE PLATES

(NOTE: Remove bobbin if it contains thread in order to prevent thread being caught when needle plate is replaced.)

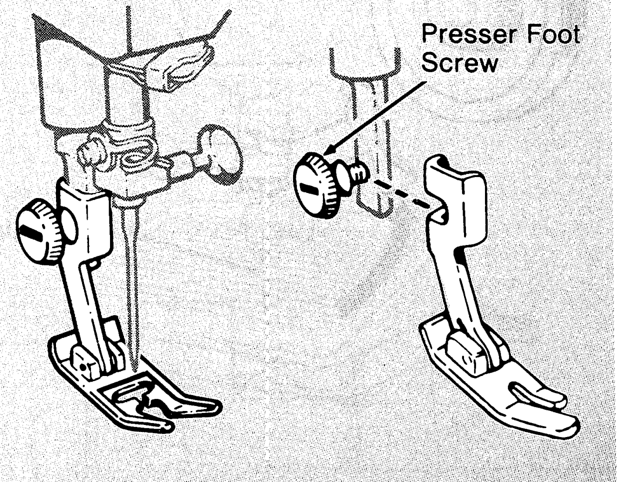
1. Raise needle to its highest position and raise presser foot.
2. Open slide plate. Remove needle plate by placing thumb under plate and lifting it up and out.
3. Position new plate over the two pins and release. (Needle plate is drawn into position by magnets.)
4. Close slide plate.



Changing Needle Plate

CHANGING PRESSER FEET

1. Raise needle to its highest position and raise the presser foot.
2. Loosen presser foot screw and remove the foot.
3. Hook new foot around the presser bar and tighten presser foot screw.



Changing Presser Foot

USING THE FINGER GUARD

Positioning the Guard

Before raising or lowering the guard, turn off the power and light switch. This will avoid the possibility of accidentally starting the machine while the needle is unguarded.

Raising the Guard

To thread and replace the needle and change the presser foot:

- Position the needle above the needle plate by turning the hand wheel toward you.
- Swing the guard out to the left and raise it *to the position shown.*

Lowering the Guard

For sewing and bobbin winding:

- Position the needle above the needle plate by turning the hand wheel toward you.
- Swing the guard down and position it *as far to the right as it will go.*

Using the Guard

The finger guard can be used with all of the accessories supplied with your machine and many of the Special Accessories available at your local Singer Sewing Center. The standard sewing procedures outlined in this instruction manual should be used, except as noted below.

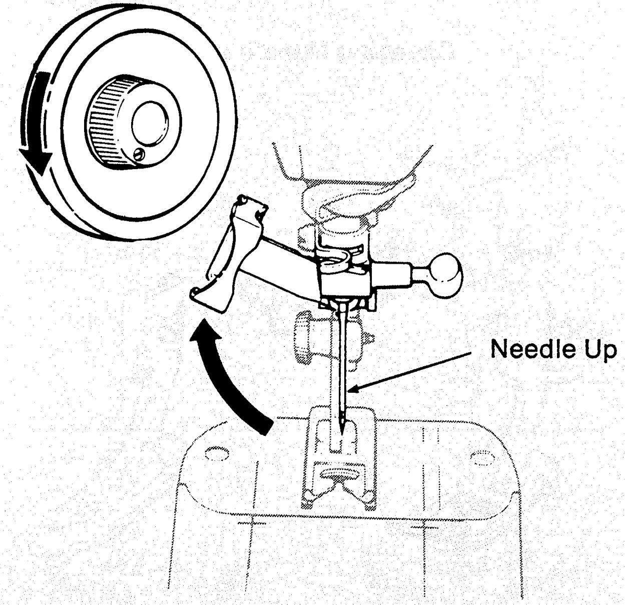
SPECIAL REQUIREMENTS

Darning with an Embroidery Hoop

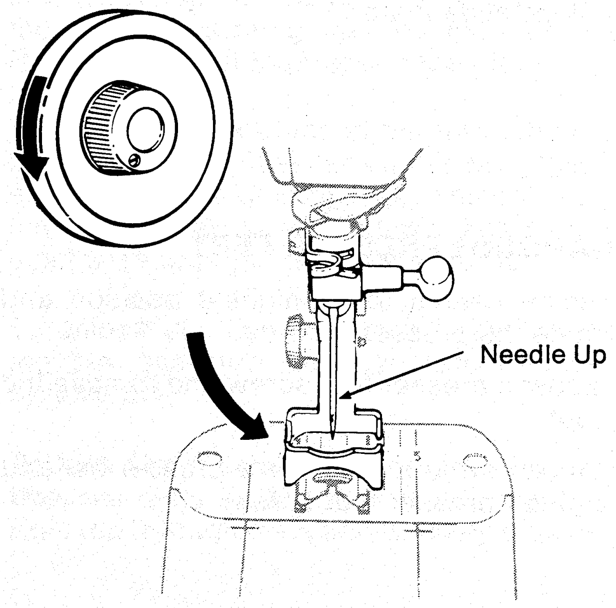
When using the feed cover needle plate for darning with an embroidery hoop, as explained on page 47, swing the finger guard out of the way. For hoop darning *with* the finger guard, use the general purpose or straight stitch needle plate. Follow the same sewing procedure with all plates.

Using the Seam Guide

To avoid the possibility of interference between the finger guard and the seam guide, lower the finger guard and the presser foot *before* positioning and securing the seam guide to the machine.



To Raise the Guard



To Lower the Guard

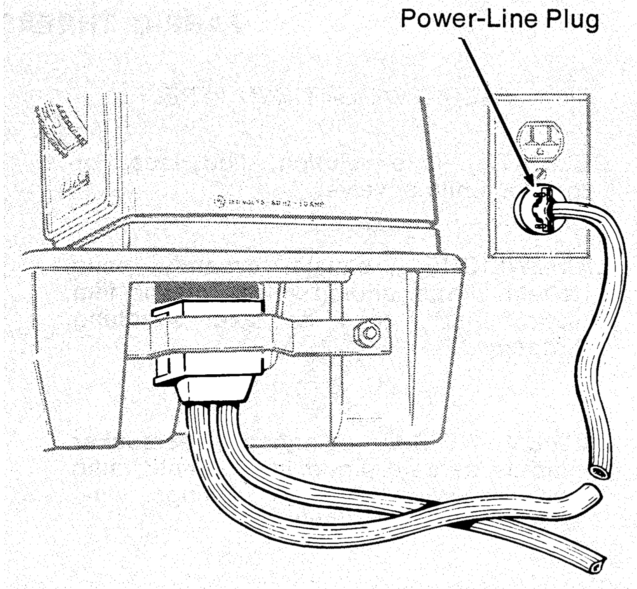
2. GETTING READY TO SEW

preliminary steps

1. CONNECTING MACHINE

Before plugging in your machine, be sure that the voltage and number of cycles indicated at the right end of the machine conform to your electrical power supply.

To connect machine, insert the power-line plug into your electrical outlet.



Electrical Connections

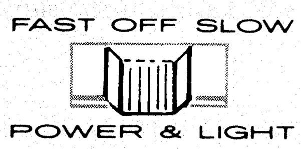
2. OPERATING MACHINE AND CONTROLLER

To turn on both the machine and sewing light and set speed range, slide the power and light switch to the selected range.

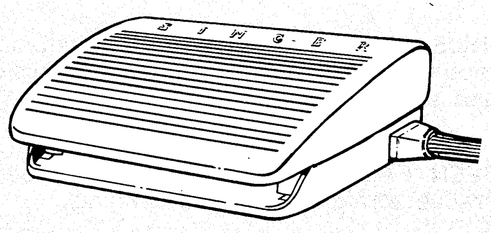
- The **FAST** setting allows for full speed capacity of the machine. It is best for long, straight seams, easy-to-handle fabrics, and general sewing where a variety of speeds is needed.
- The **SLOW** setting allows for maximum control at lower sewing speeds. Use this setting for special jobs such as button sewing, buttonhole making, and where construction details require close control.

CAUTION: *We recommend that you turn off the power and light switch before changing needles, presser feet or needle plates and when leaving the machine unattended. This eliminates the possibility of starting the machine by accidentally pressing the speed controller.*

To run the machine, press the speed controller. The harder you press, the faster the machine will sew within the selected speed range.



Power and Light Switch



Speed Controller

choosing needle and thread

The needle and thread you choose will depend upon the fabric being stitched. The table below is a practical guide to needle and thread selection. Refer to it before starting a sewing project. Be sure to use the same size and type of thread in both needle and bobbin.

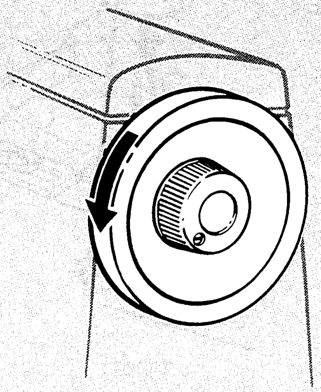
FABRIC, THREAD AND NEEDLE TABLE

FABRIC WEIGHT AND TYPE	THREAD	NEEDLES	
		TYPE	SIZE
DELICATE — tulle, chiffon, fine lace, organza, chiffon velvet	Fine polyester, nylon, or cotton thread	Style 2020 (15x1)	9
LIGHTWEIGHT — batiste, organdy, voile, taffeta, crepe, chiffon velvet, plastic film, satin, surah, peau de soie, shantung, brocade	Cotton-wrapped polyester (FINE) 100% polyester 50 mercerized cotton "A" nylon "A" silk	Style 2020 (15x1)	11
MEDIUM WEIGHT — gingham, seersucker, madras, percale, piqué, linen, chintz, faille, fine corduroy, velveteen, suitings, vinyl, terry cloth, challis, twill	Cotton-wrapped polyester 100% polyester 50 mercerized cotton 60 cotton "A" silk	Style 2020 (15x1)	14
MEDIUM HEAVY — gabardine, tweed, sailcloth, duck, denim, coatings, drapery fabrics, vinyl, deep-pile fabrics, corduroy, bonded fabric	Cotton-wrapped polyester 100% polyester Heavy-duty mercerized cotton 40 to 60 cotton	Style 2020 (15x1)	16
HEAVY — overcoatings, upholstery fabrics, canvas	Cotton-wrapped polyester Heavy-duty mercerized cotton 40 cotton	Style 2020 (15x1)	18
KNITS, WOVEN STRETCH AND ELASTIC — double knits, bonded knits, spandex, nylon tricot, ciré tricot, jersey, panné velvet, stretch terry	Cotton-wrapped polyester 100% polyester "A" nylon 50 mercerized cotton "A" silk	Style 2045 Ball Point *Yellow Band*	14
LEATHER — suede, kidskin, calf, capeskin, buckskin, cabretta, patent, cobra, lined leathers, simulated leathers	Cotton-wrapped polyester 100% polyester 50 mercerized cotton "A" nylon "A" silk	Style 2032 (15x2)	11 14 16
VINYLS (KNIT BACK) — suede, imitation reptile, crinkle patent, patent, embossed and printed vinyls	Cotton-wrapped polyester 100% polyester 50 mercerized cotton "A" nylon "A" silk	Style 2045 Ball Point *Yellow Band*	14
WOVEN FABRICS (ALL WEIGHTS) — decorative straight-stitch topstitching	"D" silk† (Buttonhole twist)	Style 2020 (15x1)	16 18
LIGHT AND MEDIUM WEIGHTS (WOVEN) — decorative twin-needle stitching	Cotton-wrapped polyester 100% polyester 50 mercerized cotton	Style 2028 (twin)	14

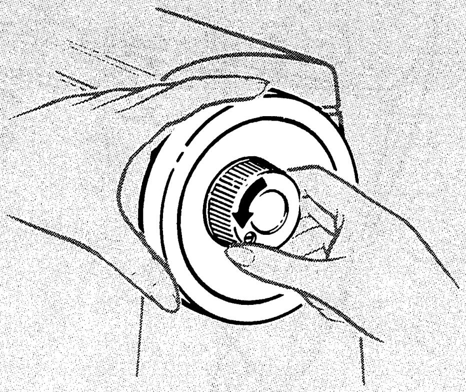
†Use with 50 mercerized cotton or "A" silk in bobbin

WINDING THE BOBBIN

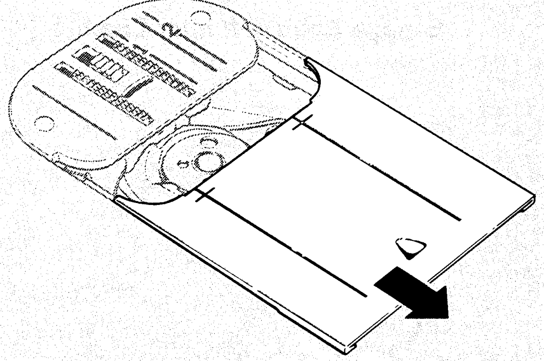
Preparation



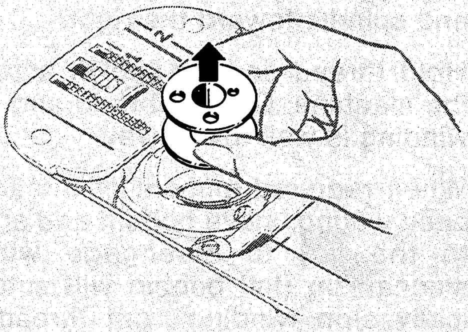
1. Turn hand wheel toward you until needle is at its highest position.



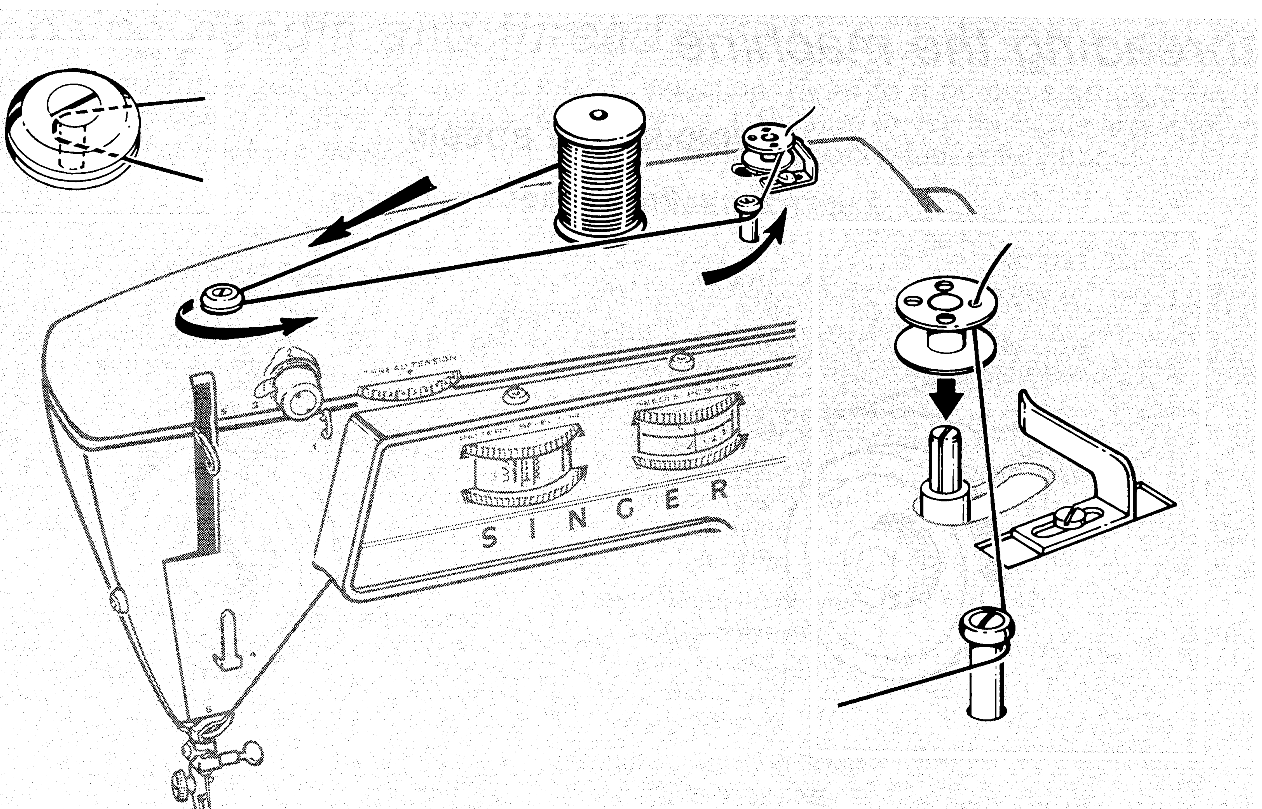
2. Disengage hand wheel from sewing mechanism by loosening the hand wheel knob with your right hand while holding the hand wheel with the left.

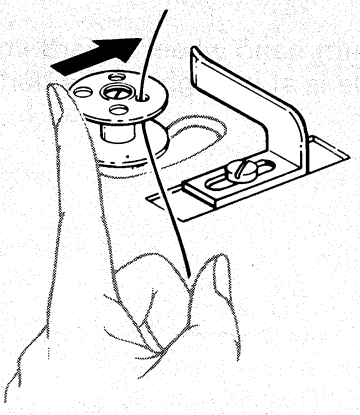


3. Open the slide plate.

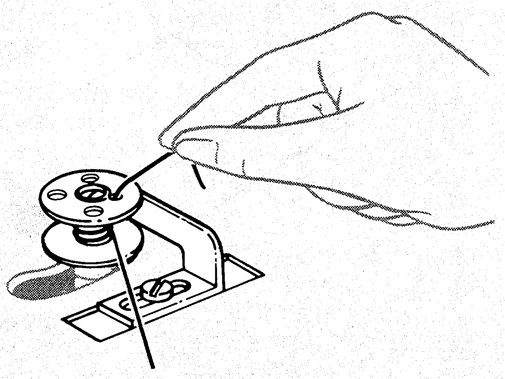


4. Lift out the bobbin.





Engage Bobbin Winder Latch

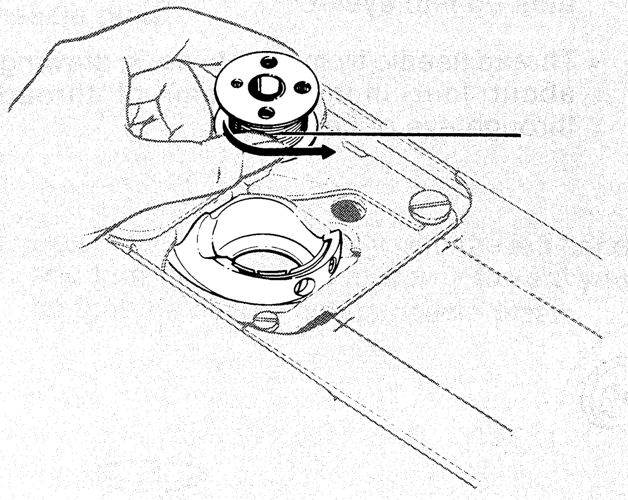


Hold Thread End to Start Winding

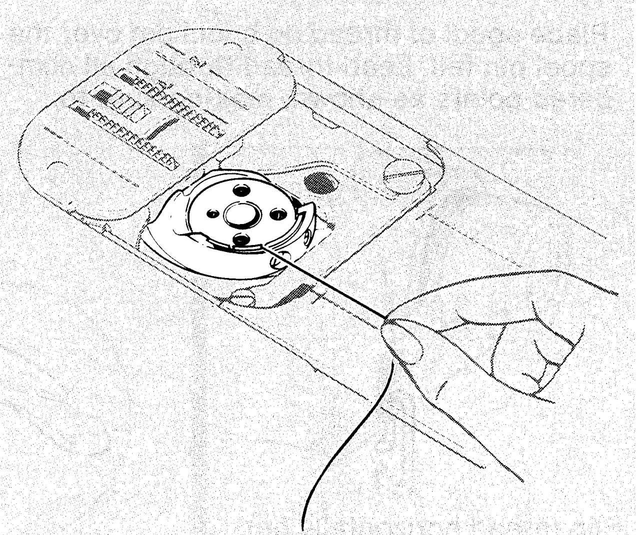
Winding Steps

1. Place thread spool on spool pin over the spool pin felt. Lead thread between tension discs, as shown, around thread post and through small hole in bobbin (from the inside out).
2. Place bobbin on spindle and engage winding mechanism by moving bobbin and spindle toward the right.
3. Hold thread end as shown and start the machine. Cut off thread end when winding is well under way.
4. When required amount of thread has been wound, move bobbin and spindle to the left to disengage winding mechanism (full bobbin will automatically stop winding), cut thread and remove bobbin from spindle.
5. Tighten hand wheel knob by turning it away from you with your right hand while holding the hand wheel with your left hand.

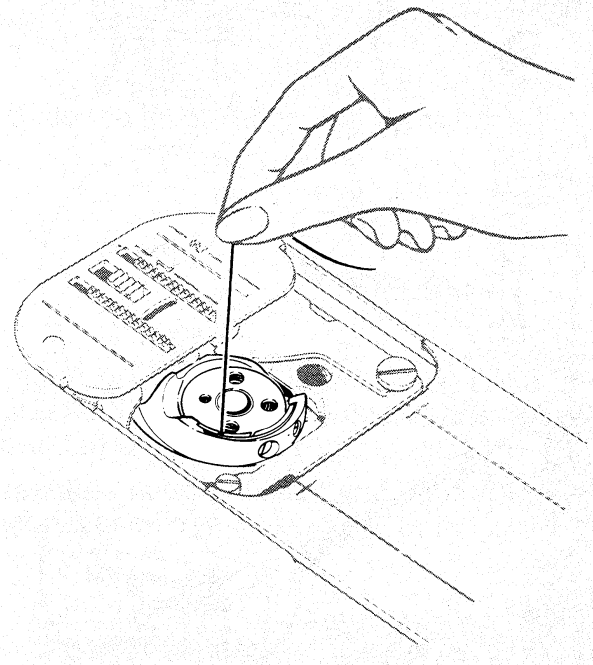
THREADING THE BOBBIN CASE



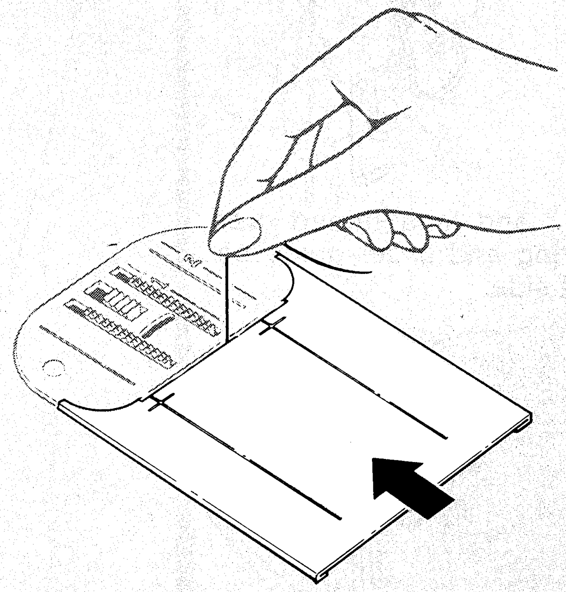
1. Hold bobbin so that the thread unwinds in direction shown, and put bobbin in bobbin case.



2. Pull thread into notch in bobbin case, draw it under the tension spring and into the slot.



3. Draw approximately four inches (10cm) of thread diagonally across the bobbin.

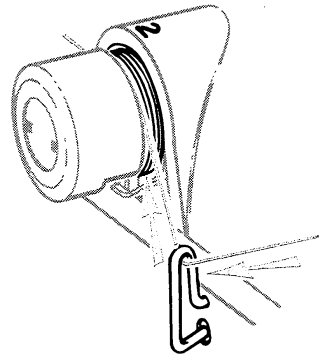


4. Close slide plate, allowing the thread to enter the slot in the slide plate.

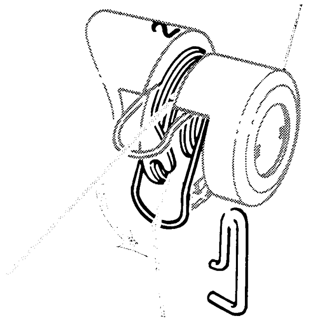
THREADING THE NEEDLE

1. Turn hand wheel toward you to raise needle and take-up lever to highest position. Raise presser foot to release tension discs. Swing finger guard out of the way to the left. See page 8.
2. Place spool of thread on spool pin over the spool pin felt. Lead thread through all *numbered* points as shown, making sure to:

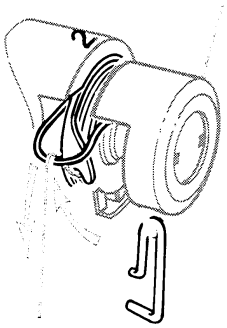
- Thread tension discs as illustrated.
- Thread take-up lever from *back to front,* guiding thread down over top of lever and then up into eyelet.
- Thread needle from *front to back,* drawing about four inches (10cm) of thread through eye of needle.



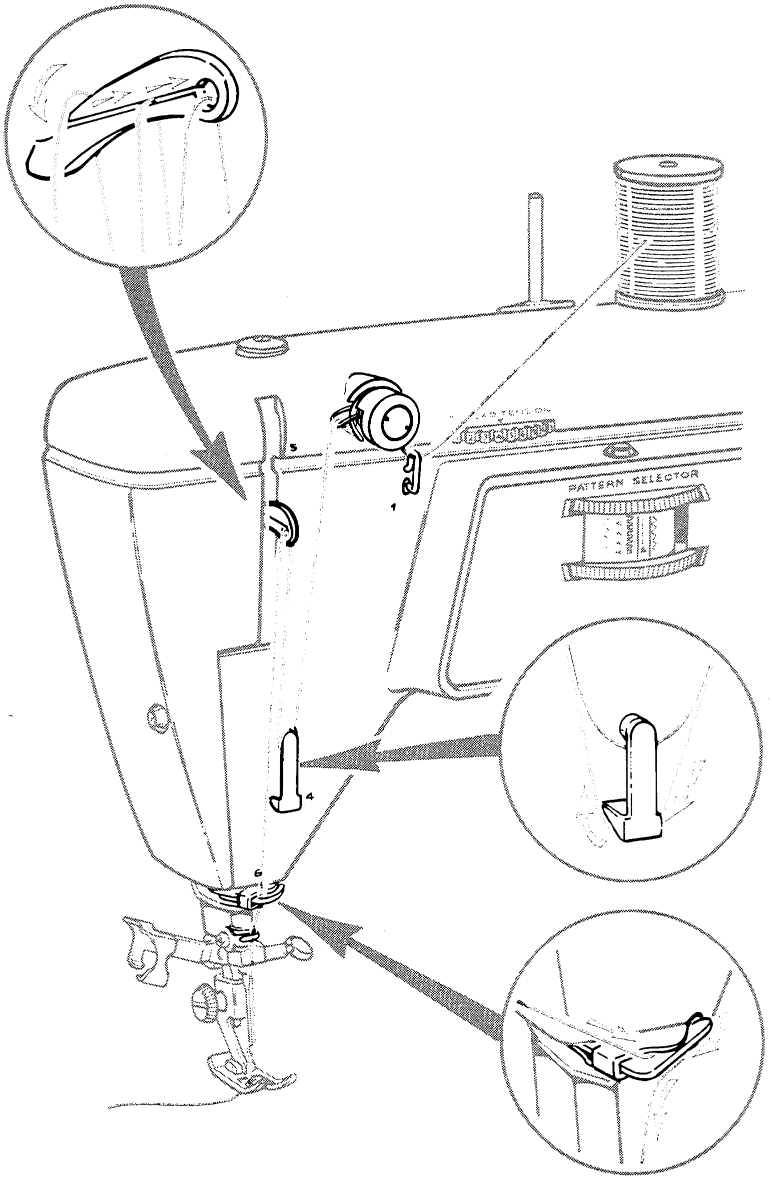
Slip thread horizontally *between* tension discs from the top . . .



. . . and lead thread *over* spring and *under* guide on left side.

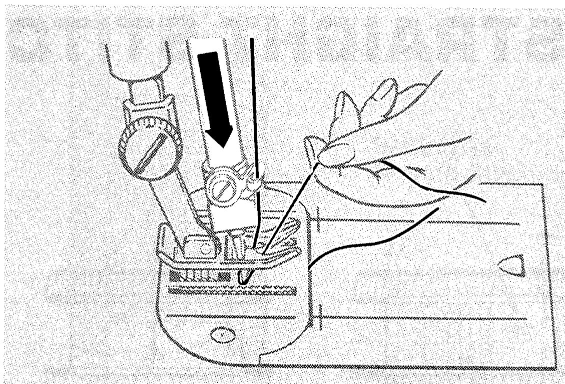


Allow spring to return to its normal up position and continue threading the machine.



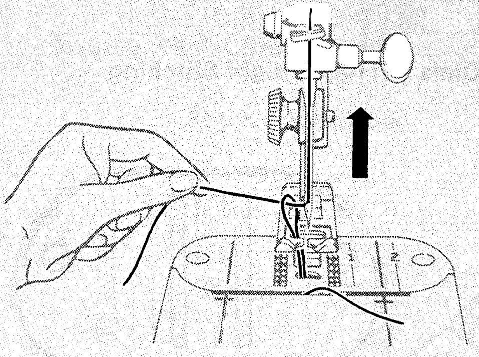
RAISING THE BOBBIN THREAD

Now that you have wound the bobbin and threaded the needle, you will need to raise the bobbin thread through the needle hole in the needle plate.



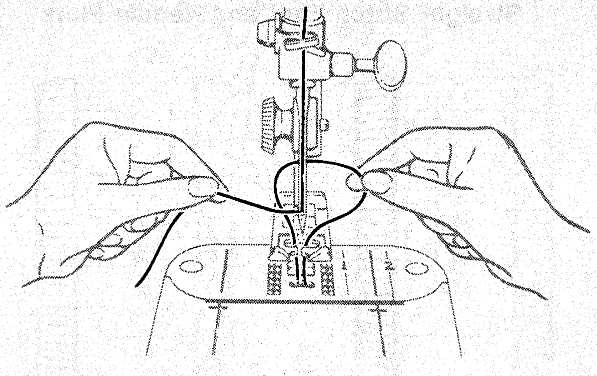
Step 1

1. Hold needle thread lightly with the left hand and turn the hand wheel *slowly* toward you so that the needle enters needle plate.



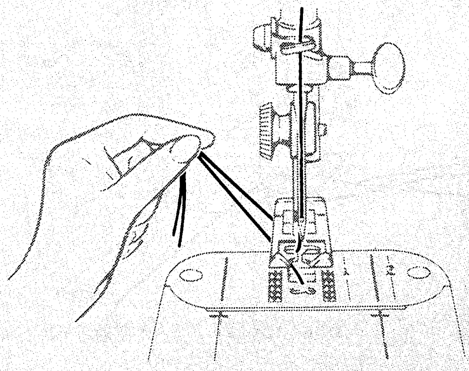
Step 2

2. Continue turning hand wheel and holding needle thread until needle rises and brings up bobbin thread in a loop.



Step 3

3. Undo the loop with your fingers.



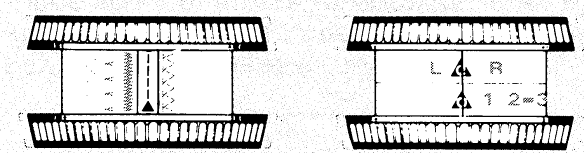
Step 4

4. Place needle and bobbin threads under the presser foot and draw both threads to back and left of needle.

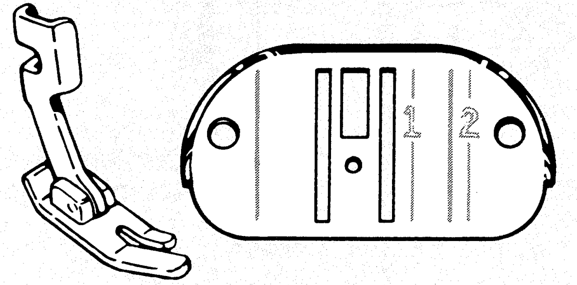
To regulate needle-thread and bobbin-thread tensions, see page 18.

...you are now ready to sew

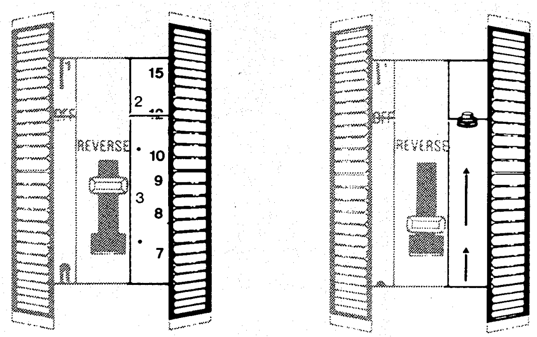
3. STRAIGHT STITCHING



Dials Set for Straight Stitching

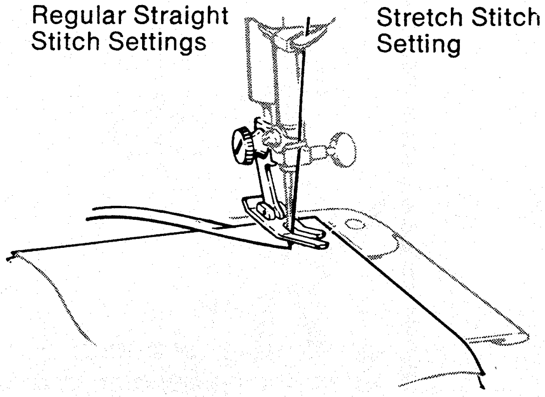


Straight Stitch Foot and Needle Plate



Regular Straight Stitch Settings

Stretch Stitch Setting



Starting to Sew

- Pattern: Straight Stitch ▲
- Needle Position: ▲
- Stitch Width: ▲
- Stitch Control: To suit fabric
- Straight Stitch Needle Plate or General Purpose Needle Plate
- Straight Stitch Foot or General Purpose Foot

---

preparation

Before you set the dials for straight stitching, turn the hand wheel toward you until the needle is above the needle plate.

SETTING THE MACHINE

1. Set pattern dial selector at ▲ .
2. Move needle position dial to ▲ .
3. Set stitch width dial on ▲ .
4. Set stitch control for desired stitch length. For regular straight stitching, turn dial to a numbered setting; for straight stretch stitching, turn dial to ⊜ setting.

CHOOSING ACCESSORIES

Best results will be obtained if you use the straight stitch foot and needle plate. However, the general purpose foot and needle plate may also be used.

starting to sew

- Place needle and bobbin threads under presser foot and draw to back of machine.
- Position the needle in the fabric where desired for stitching start.
- Lower the presser foot and start the machine.

To sew perfectly on a wide variety of fabrics adjust stitch length, pressure and thread tension as instructed on the following pages.

For information on straight stretch stitching, turn to page 40.

adjusting for your fabric

SETTING STITCH LENGTH

The stitch control dial regulates the length of both straight and zig-zag stitches. The numbers **6** to **20** represent the number of straight **stitches per inch** and the numbers **1** to **4** represent **stitch length in millimeters.** Generally, shorter stitches are best for lightweight fabric, longer ones for heavy fabric. Curved seams, bias-cut seams, and scallops require short straight stitches for elasticity and smooth contours.

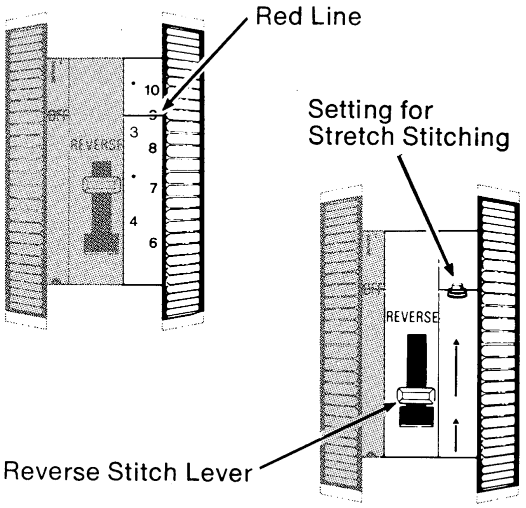
The **FINE** area is used for adjustment of zig-zag satin stitching (page 26).

The ⊜ setting is used for straight-stretch stitching and *Flexi-Stitch* patterns only. For information on *Flexi-Stitch* patterns and straight-stretch stitching, see pages 23 and 40.

- **To set stitch control,** turn dial until setting desired is under the red line.

For reverse stitching, simply press reverse-stitch lever all the way down and hold in place. Release lever for forward stitching.

Note: Reverse-Stitching is not recommended when using a *Flexi-Stitch* pattern.



Stitch Control Dial

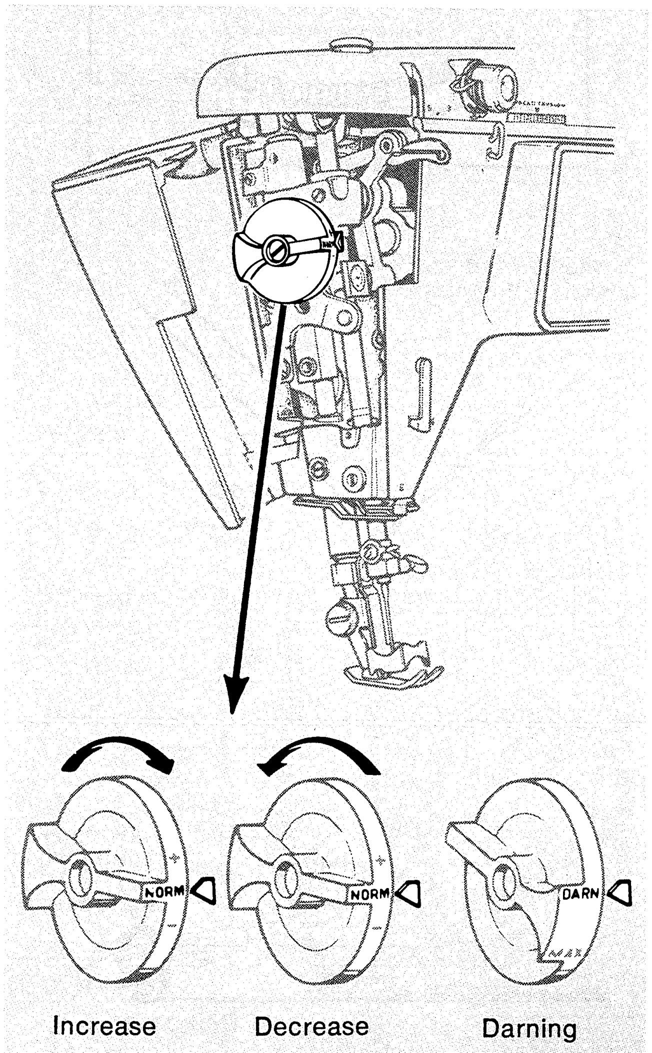
REGULATING PRESSURE

See page 6 for instructions on how to unlock the face plate for access to pressure dial.

The pressure dial regulates the pressure that the presser foot exerts on the fabric. Correct pressure is important because it means fabric feeds smoothly and evenly. The **NORM** (normal) setting is an all-purpose setting that can be used for sewing a wide variety of fabrics of different weights and textures. Intermediate notched settings, above and below **NORM**, are also provided. When you need extra control to sew very heavy fabric, use the **MAX** (maximum) setting.

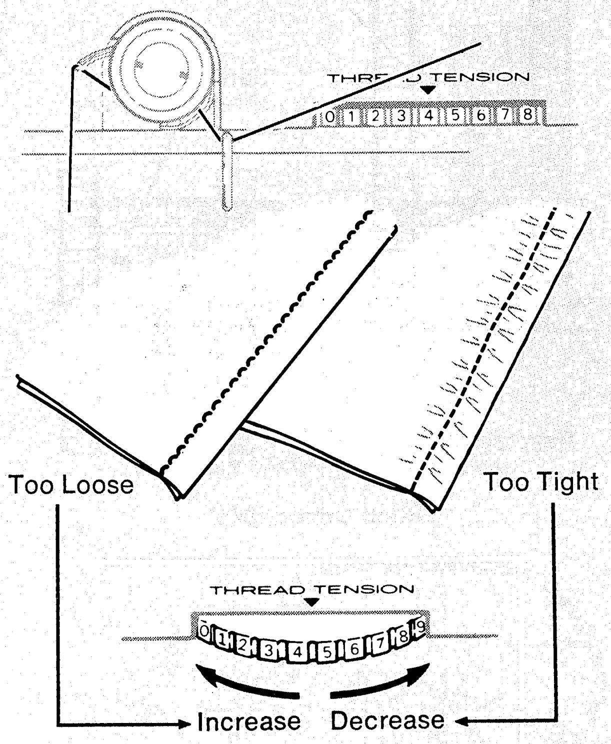
Lower the presser foot before setting pressure.

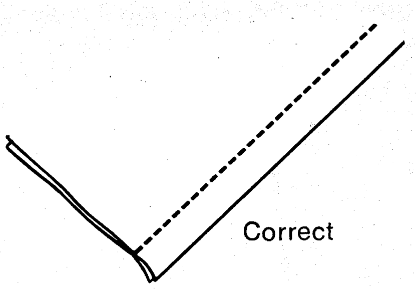
- **To increase pressure,** turn dial from **NORM** toward **MAX.**
- **To decrease pressure,** turn dial from **NORM** toward **DARN.**
- **For darning,** set dial on **DARN**.

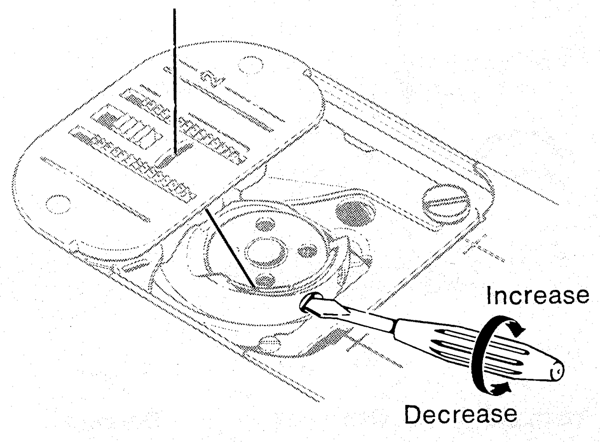


Pressure Dial

Needle-Thread Tension







Bobbin-Thread Tension

REGULATING THREAD TENSION

Correct tension is important because too much or too little will weaken your seams or cause your fabric to pucker. Make a test sample with the fabric and thread you plan to use, and examine it. A perfect stitch will have the needle and bobbin threads locked between the two layers of fabric with no loops on top or bottom and no puckers.

Needle-Thread Tension

The tension dial regulates the degree of tension on your needle thread. Set it according to the type of thread and fabric you use. The numbers on the dial eliminate guesswork in duplicating settings.

If the stitches in your test sample look loose, increase needle-thread tension. If the fabric puckers, decrease tension.

- **To increase tension,** turn dial to higher number.
- **To decrease tension,** turn dial to lower number.

Bobbin-Thread Tension

Bobbin-thread tension is controlled by a screw located on the bobbin case. You will seldom need to adjust bobbin-thread tension since it is usually possible to obtain the correct balance by adjusting needle-thread tension alone.

On those rare occasions when it becomes necessary to adjust the bobbin-thread tension, use the small tension screwdriver furnished with your accessories. A very slight turn on the screw nearest the thread slot on the bobbin case will produce a noticeable change in bobbin-thread tension.

- **To increase tension,** turn screw clockwise.
- **To decrease tension,** turn screw counterclockwise.

sewing a seam

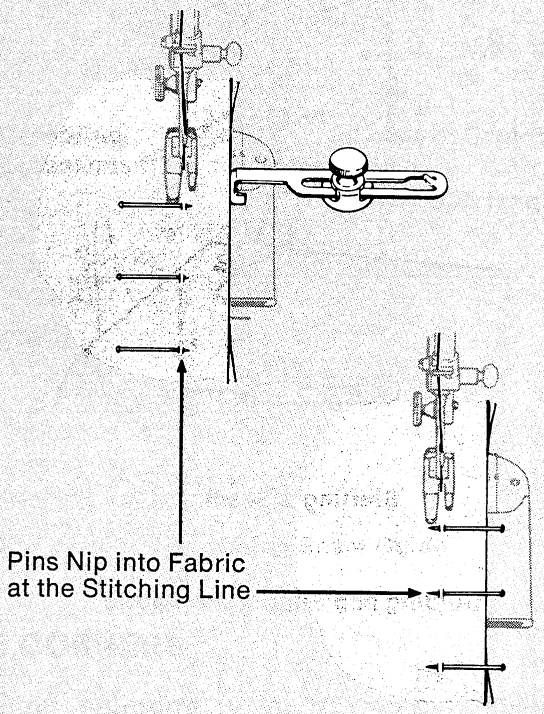
PIN BASTING

Pin basting is a time saver and can be used in place of hand basting when you are straight stitching seams in easy-to-handle fabric.

Use fine pins and place them so that:

- They are at right angles to the presser foot and just nip into the fabric at the stitching line.
- They do not extend under both sides of the presser foot. *Never place pins on the underside of the fabric in contact with the feed.*

Withdraw pins from fabric as you stitch. Sewing over pins is not recommended.

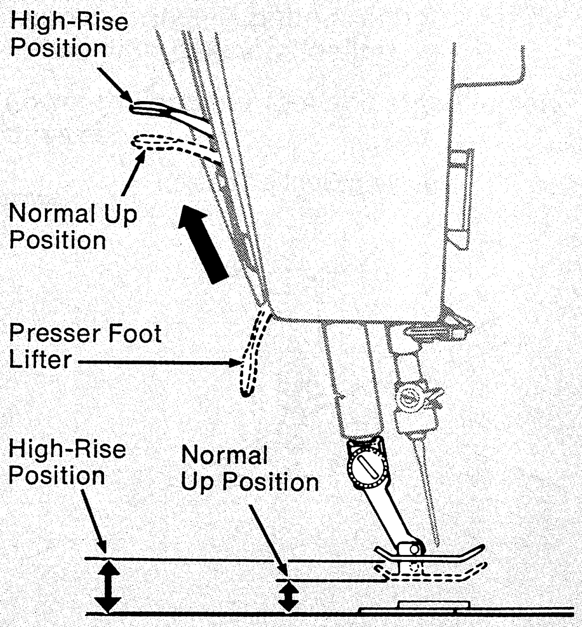

Pins Nip into Fabric
at the Stitching Line

Pin Placement When Seam Guide Is Used

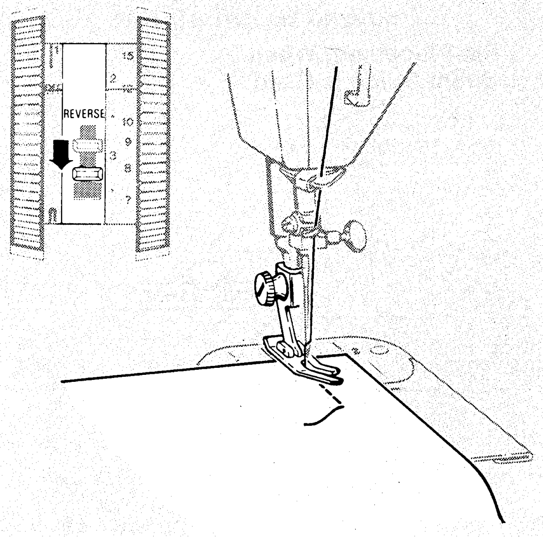
Pin Placement When Seam Guide Is Not Used

PLACING FABRIC

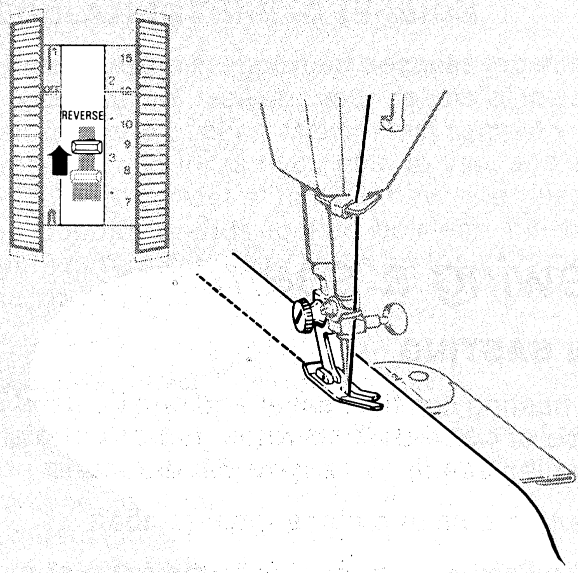
Most fabric can be placed under the presser foot by raising the presser-foot lifter to its normal up position. When placing bulky fabrics, such as coating, knit or terry cloth, or multiple fabric layers, you will find it convenient to raise the presser-foot lifter to the high-rise position. Hold lifter in position (since it does not lock) while placing fabric under the presser foot. Make sure the lifter is all the way down before starting to sew.


High-Rise Position
Normal Up Position
Presser Foot Lifter
High-Rise Position
Normal Up Position

Presser Foot Lifter Settings

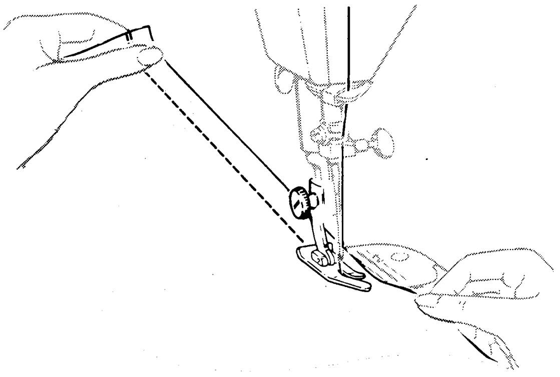


Starting a Seam

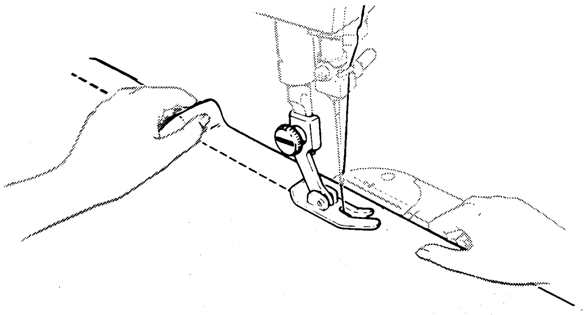


Stitching a Seam

Guiding and Supporting Fabric



Applying Gentle Tension



Applying Firm Tension

STARTING A SEAM

1. With presser foot raised, turn hand wheel toward you to position needle in fabric about 1/2 inch (1.3cm) from starting edge. Lower the presser foot.
2. Press reverse-stitch lever all the way down and hold in place. Backstitch almost to edge of fabric for reinforcement.
3. Release reverse-stitch lever and stitch in forward direction.

GUIDING AND SUPPORTING FABRIC

Most fabrics need only to be guided in front of the presser foot. Some fabrics, however, require support while being stitched, as shown. These fabrics require using the straight stitch presser foot.

CAUTION: *Do not pull the fabric as you apply gentle or firm tension while stitching, as this may deflect the needle, causing it to break.*

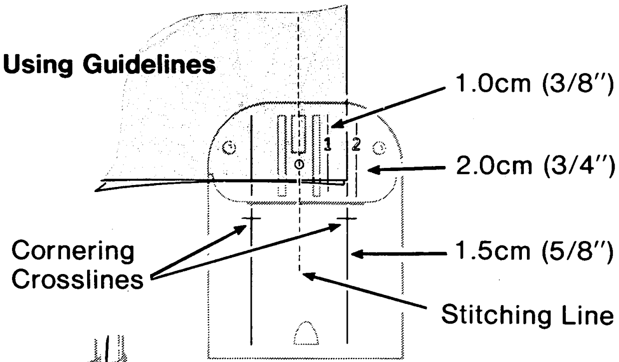
- For filmy sheers, knits, tricot, etc., apply *gentle* tension by holding seam in front and back of the presser foot.
- For stretch fabrics, apply *firm* tension front and back when stitching in the same direction as the stretch. For seams not on the stretch direction, stitch in the conventional manner, guiding fabric in front of the presser foot.

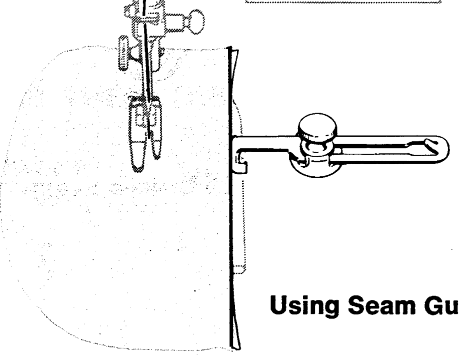
KEEPING SEAMS STRAIGHT

To keep the seam straight, use one of the guidelines on the needle plate. The numbers indicate distance, in centimeters, from the needle. If you want a 1.5cm (5/8-inch) seam, for example, line up your fabric with the unnumbered, heavy guideline. Note that both heavy guidelines (the most commonly used) are extended on the slide plate for your convenience; the crosslines serve as cornering guides when stitching a square corner.

For extra help in keeping the seam straight, you may wish to use the seam guide. Because it allows you to guide stitches between 3mm (1/8-inch) and 3.2cm (1-1/4 inches) from the fabric edge, it is useful for very narrow or unusually wide seams.

Using Guidelines





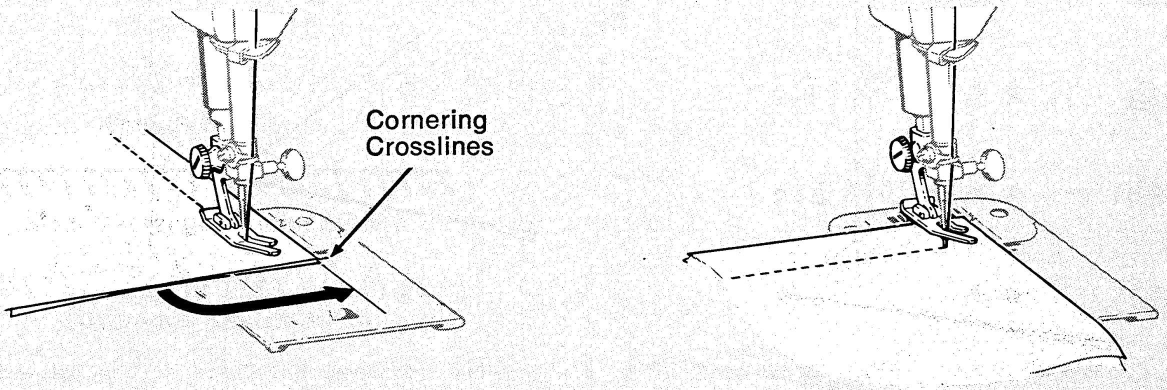
Using Seam Guide

TURNING SQUARE CORNERS

To turn a square corner 1.5cm (5/8-inch) from the fabric edge, you need not measure or mark the seam. Simply use the crosslines on the slide plate.

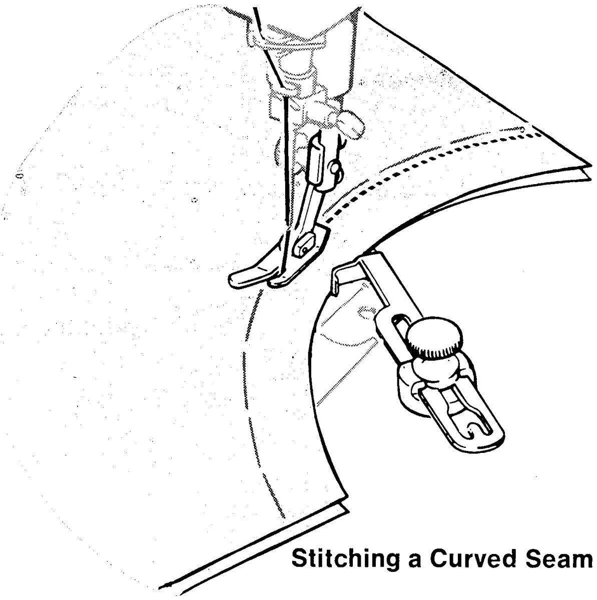
- Line up your fabric with right or left heavy guideline on the needle plate. Stitch seam, slowing speed as you approach corner.
- Stop stitching, *with the needle down,* when the bottom edge of the fabric reaches the cornering crosslines on the slide plate.
- Raise presser foot and turn fabric on needle, bringing bottom edge of fabric in line with heavy guideline.
- Lower the presser foot and stitch in new direction.

Pivoting at Corner



Fabric at Crosslines

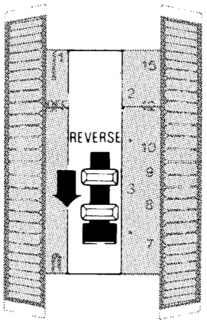
Fabric after Turning



Stitching a Curved Seam

CURVED SEAMS

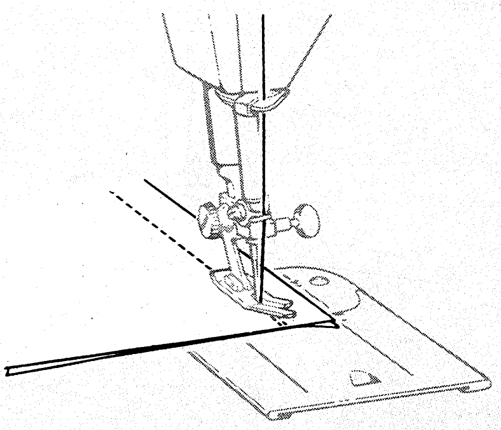
1. Use a short stitch for elasticity and strength. For example, if you use 12 stitches to the inch (stitches approximately 2mm long) for straight seams, select 15 to 20 per inch (stitches approximately 1.5mm long) to stitch curved seams in the same fabric.
2. If you use the seam guide to guide stitching, attach it at an angle so that the edge that is closer to the needle acts as a guide.



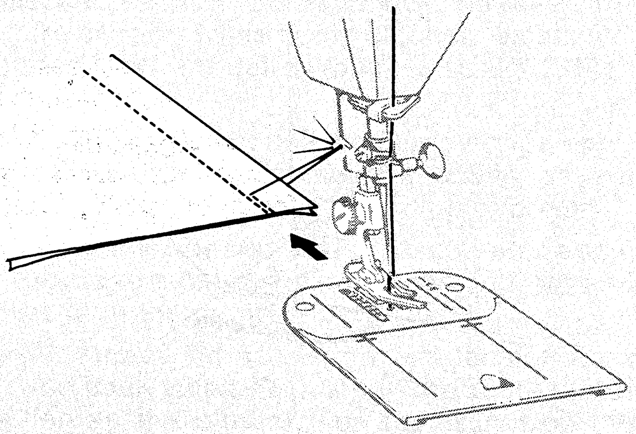
Reverse-Stitch Lever

REINFORCING END OF SEAM

1. Stitch almost to the edge of the fabric.
2. Press reverse-stitch lever all the way down and hold in place. Backstitch approximately 1/2 inch (1.3cm) to reinforce end of seam. Stop the machine and release lever.
3. Raise needle to its highest position, raise the presser foot, and remove the fabric by drawing it to the back and left.
4. Cut threads on thread cutter at rear of presser bar.



Ending a Seam



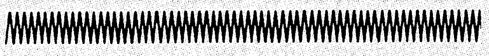
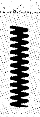
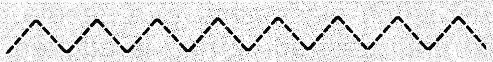
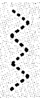
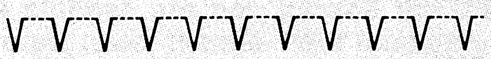
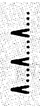
Cutting Threads

4. ALL ABOUT ZIG-ZAG STITCHING

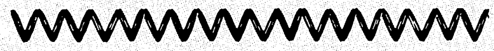
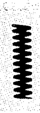
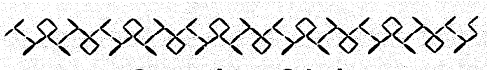
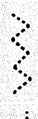
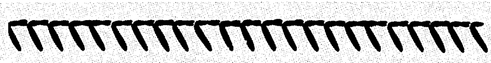
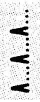
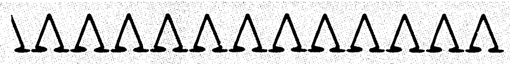
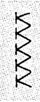
two kinds of zig-zag stitches

The zig-zag stitches built into your machine include basic zig-zag stitches and *Flexi-Stitch* patterns. In addition to the obviously decorative uses of these stitches, some also serve practical purposes. Under the section called "Sewing the Professional Way" beginning on page 34, you will find instructions for both decorative and practical uses of these stitches. All of the basic zig-zag stitches and some of the *Flexi-Stitch* patterns are charted below. (When sewing *Flexi-Stitch* patterns, set speed range at **SLOW.**)

BASIC ZIG-ZAG STITCHES AND THEIR DIAL SETTINGS

Stitch Pattern	Pattern Dial	Stitch Width Dial	Needle Position Dial	Stitch Control
 **Plain Zig-Zag Stitch**		**1 - 5**	**L ▲ R**	**Numbered Area thru FINE**
 **Multi-Stitch Zig-Zag**		**1 - 5**	**L ▲ R**	**Numbered Area**
 **Blindstitch**		**1 - 5**	**L ▲ R**	**Numbered Area**

FLEXI-STITCH PATTERNS AND THEIR DIAL SETTINGS

Stitch Pattern	Pattern Dial	Stitch Width Dial	Needle Position Dial	Stitch Control
 **Ric-Rac Stitch†**		**2 - 5**	**L ▲ R**	⊜
 **Semaphore Stitch**		**2 - 5**	**L ▲ R**	⊜
 **Slant Overedge Stretch Stitch†**		**2 - 5**	**L ▲ R**	⊜
 **Overedge Stretch Stitch**		**2 - 5**	**L ▲ R**	⊜

†This stitch is designed for strength and permanence and cannot be readily ripped out without risk of fabric damage.

adjusting dials

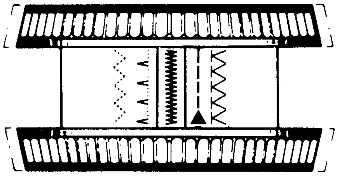
SETTING PATTERN DIAL

To unlock dial, see instructions on page 6.

Before moving the dial, make sure needle is above the fabric.

Push the pattern dial in and turn it until desired zig-zag stitch pattern is between the red lines.

To produce a *Flexi-Stitch* pattern, the stitch control dial must be turned until the symbol ⊜ appears under the red line.



- **Push In**
- **Rotate**
- **Release**

ADJUSTING STITCH PLACEMENT

To unlock dial, see instructions on page 6.

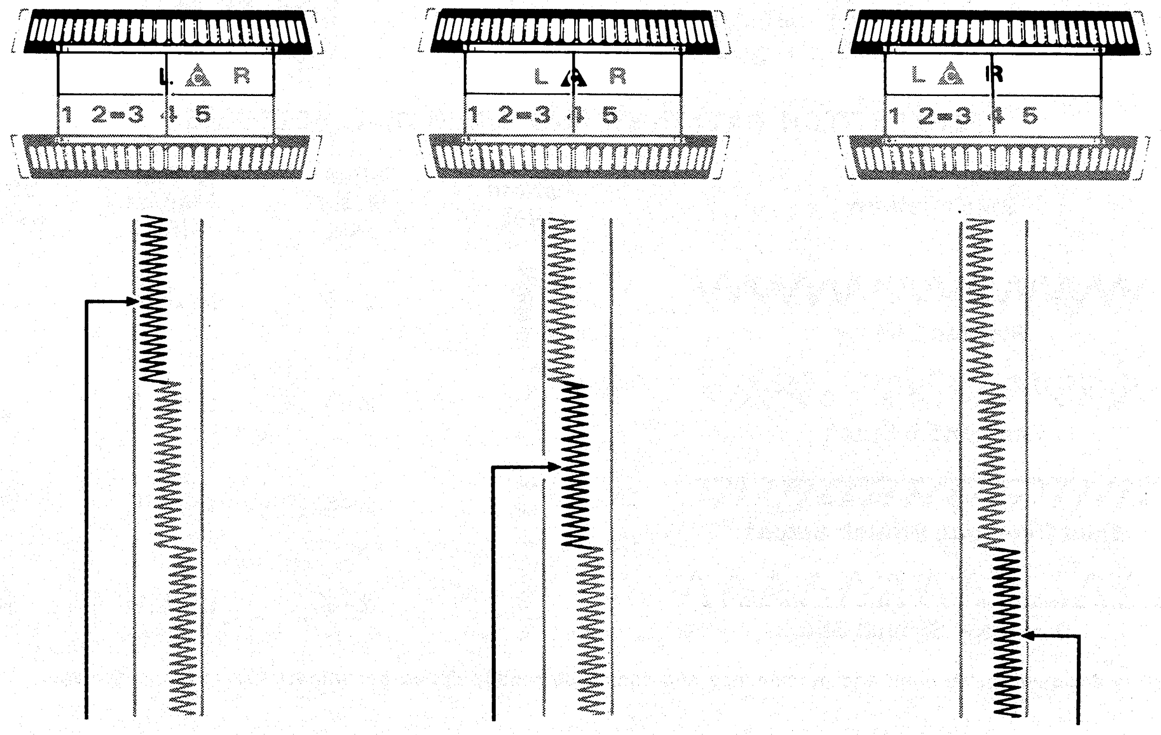
Before moving needle position dial, move stitch width to **5***, and make sure needle is above the fabric.*

Needle position setting ▲ places the needle in center stitching position. Settings **L** and **R** place the needle in left and right stitching positions at stitch widths less than **5.**

Setting ▲ is used most often. Settings **L** and **R** are for special placement of stitching. For example, an **L** setting is required for bar-tack buttonholing and button sewing. An **L** or **R** setting can be used to place narrow zig-zag stitching to the left or right of center in decorative work.

To adjust stitch placement, turn needle position dial until desired setting is aligned with red line.

Adjusting Stitch Placement



Left Needle Position Center Needle Position Right Needle Position

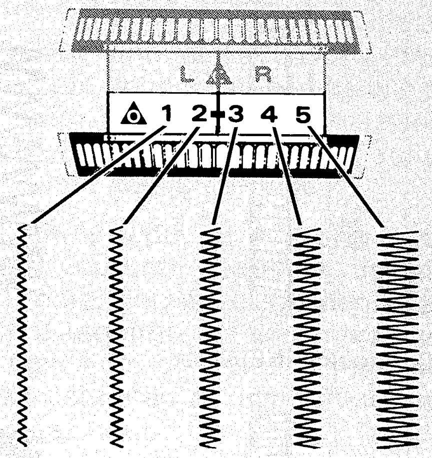
ADJUSTING WIDTH OF DESIGN

To unlock dial, see instructions on page 6.

Before moving dial, make sure needle is above the fabric.

To produce a zig-zag stitch, turn the stitch width dial to any setting between **1** and **5**. The higher the number, the wider your stitch will be. A stitch width setting of **2** or more is recommended for *Flexi-Stitch* patterns.

Adjusting Width of Design

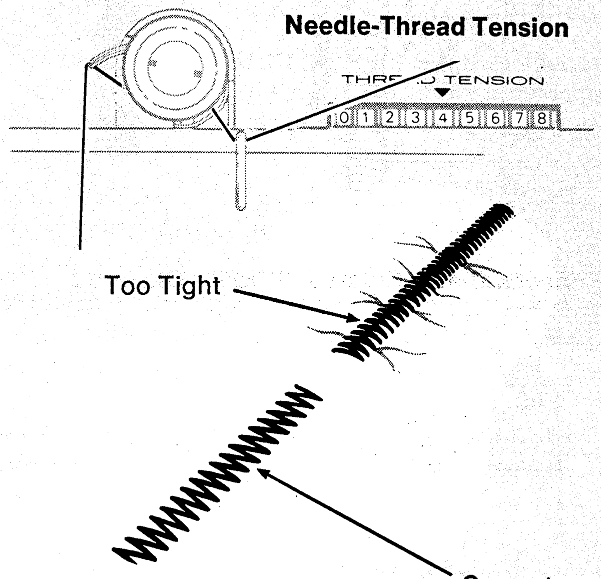


ADJUSTING NEEDLE-THREAD TENSION

Zig-zag stitching usually requires less needle-thread tension than straight stitching. Make a test sample with the fabric and thread you plan to use so that you can adjust tension to suit the stitch pattern you have chosen. The stitches should lie flat against the fabric without causing the fabric to pucker.

If the stitches are not flat and the fabric is puckered, lower the needle-thread tension by turning the dial to a lower number.

Needle-Thread Tension

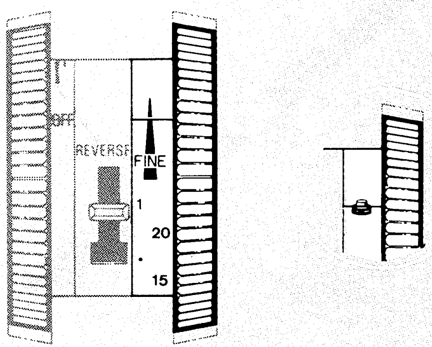


ADJUSTING STITCH LENGTH

Any stitch control setting in the numbered area will give you an open zig-zag stitch of the pattern you select except *Flexi-Stitch* patterns. The triangular symbol on the dial designates the **FINE** stitch area and is used for the adjustment of zig-zag satin stitching (see page 26 for specific instructions).

To produce the overedge stretch stitch or any other *Flexi-Stitch* pattern (refer to stitch pattern chart), the stitch control dial must be set on the ⛀ symbol. Simply turn the dial downward until the symbol is centered under the red line. No further adjustment is necessary.

When using the ⛀ setting of the stitch control, you cannot backstitch the stitch pattern.

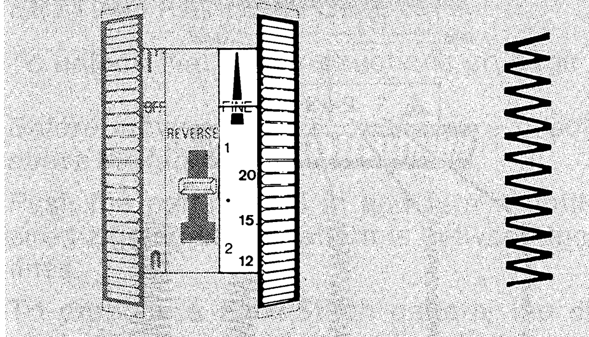


Stitch Control Dial

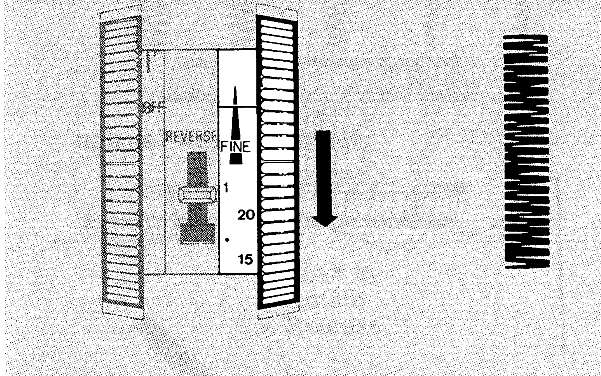
satin stitching

Satin stitching, a series of closely spaced zig-zag stitches that form a smooth, satin-like surface, is useful for both practical and decorative work. The plain zig-zag stitch, for example, is suitable for bar tacks and applique when closed up to form a satin stitch. The *Flexi-Stitch* patterns, however, have a single stitch length setting and cannot be satin-stitched.

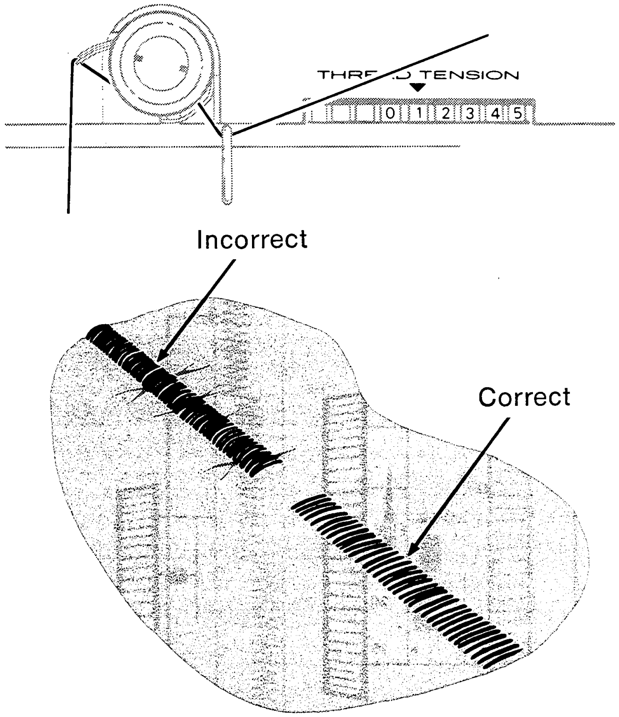
When you wish to produce a satin stitch, make a test sample first so that you can adjust the stitch length and thread tension properly. Soft fabrics may require a backing to ensure firm satin stitching. Crisp lawn or organdy is suitable for this purpose. For best results use the special purpose foot.



Stitch Control in FINE Area



As the Dial Is Rotated, Stitches Close Up



Adjusting Thread Tension

DIAL SETTINGS

- Pattern: Plain Zig-Zag
- Needle Position:
- Stitch Width: **2** to **5**
- Stitch Control: In **FINE** area
- General Purpose Needle Plate
- General Purpose Foot or Special Purpose Foot

Adjusting Stitch Length

1. Set stitch control dial at bottom of **FINE** area.
2. Run machine at **SLOW** speed.
3. Gradually turn dial downward until stitches are closely spaced and form a smooth surface.

Adjusting Thread Tension

Satin stitching requires less tension than straight stitching or open zig-zag stitching. Furthermore, the wider the satin stitch, the lighter the tension on the thread must be. Notice the stitching on your sample. If the fabric is puckered, lower the needle-thread tension by turning the tension dial to a lower number.

5. BUTTONS AND BUTTONHOLES

buttons

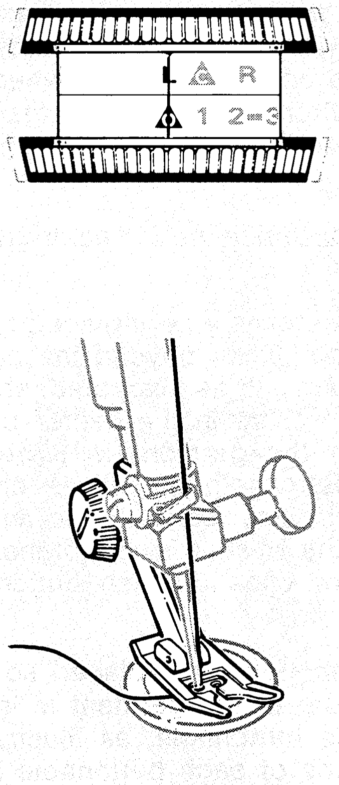
- Pattern: Plain Zig-Zag
- Stitch Width: △ and **4** or to suit button
- Needle Position: **L**
- Feed Cover Needle Plate
- General Purpose Foot

The space between the holes in the button determines the stitch width settings. The △ setting must always be used to position the needle over the left hole and fasten stitching. For buttons with standard hole spacing, use settings △ and **4.** For buttons with unusual hole spacing, use setting △ and increase or decrease the width setting **4** as necessary.

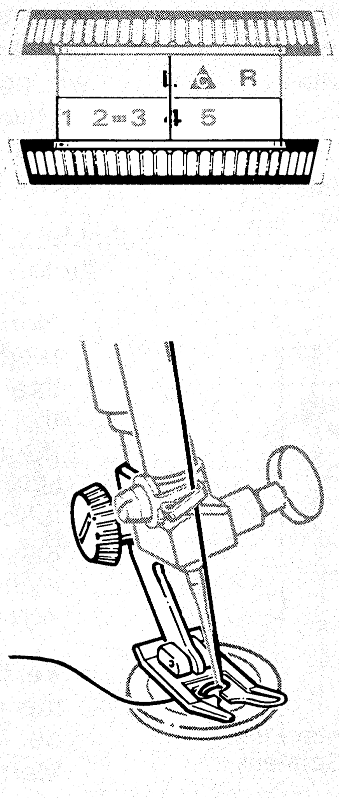
To sew on buttons approximately one inch (2.5cm) in diameter or larger:

1. Set stitch width dial at △ . Position button under foot so that the needle will enter the left hole. Lower foot. Turn hand wheel toward you until needle rises out of button and is just above the foot.
2. Set stitch width at **4**. Turn hand wheel toward you until needle is just above the right hole. Increase or decrease stitch width if required, so that needle will enter the right hole of button. Take six or more zig-zag stitches at this setting, ending on left side.
3. To fasten stitching, return to stitch width △ and take about three stitches.

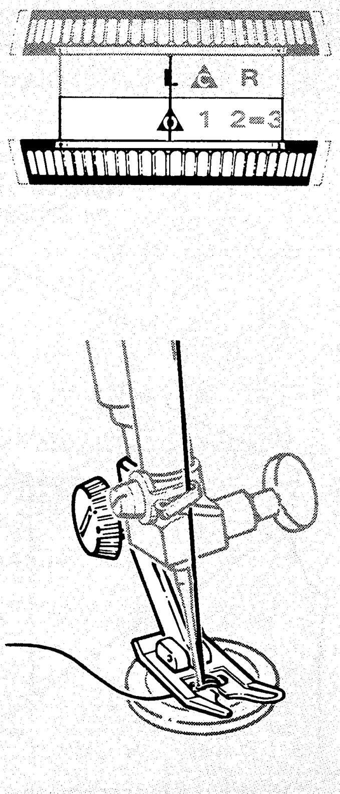
For best results with buttons smaller than one inch (2.5cm) in diameter, it is recommended that the Button Sewing Foot be used. See page 59.



Step 1

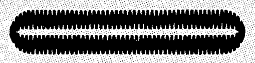


Step 2

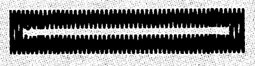


Step 3

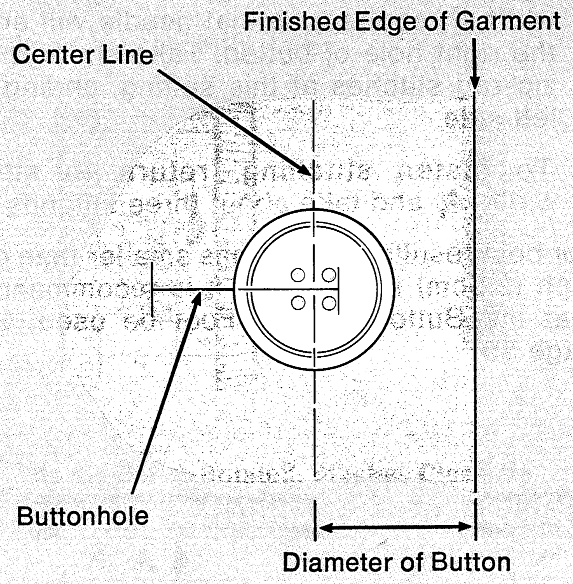
buttonholes



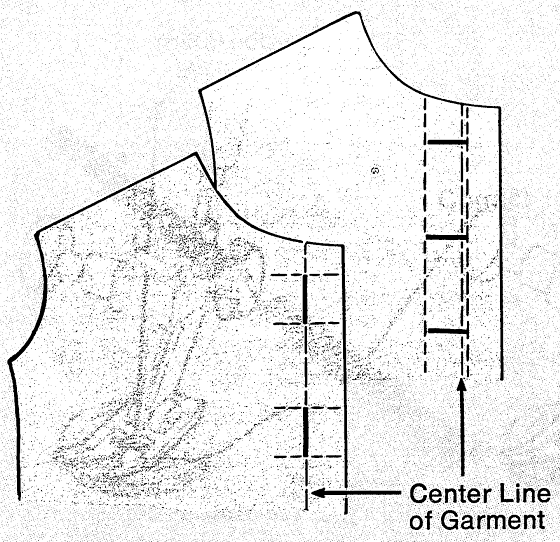
Round-End Buttonhole



Bar-Tack Buttonhole



Horizontal Placement on Crosswise Grain



Vertical Placement on Lengthwise Grain

You have a choice between two buttonhole styles and two buttonhole-making methods: round-end buttonholes made with the built-in buttonhole system of your machine and bar-tack buttonholes with square-ends made manually in four steps. Round-end buttonholes can be made in light- and medium-weight fabric; bar-tack buttonholes are best in lightweight fabric.

BUTTONHOLE POSITION

Accurate guidelines are essential to keep buttonholes at a uniform distance from the edge of the garment, evenly spaced, and on the grain of the material.

1. For center closures, mark the center line of the garment as indicated on your pattern. This guideline can be made by hand basting. The space from the center line to the finished edge of the garment must be at least equal to three-quarters the diameter of the button. With this spacing, the button will not extend beyond the edge when the garment is buttoned. Make sure that the center line marking follows a lengthwise fabric thread.
2. Mark a position guideline for each buttonhole.
    - **Horizontal** buttonholes are placed to extend 1/8 inch (3mm) beyond the center line of the garment, as illustrated, so that the buttons will be in the center of the figure when the garment is fastened. Horizontal buttonhole guidelines should follow a crosswise fabric thread and be longer than the finished length of the buttonhole. Mark ends of each buttonhole vertically.
    - **Vertical** buttonholes are placed so that the center line of the garment is in the center of the buttonhole, as illustrated. Mark the ends of each buttonhole horizontally across the center line basting and use the center line marking as the buttonhole guide when stitching.

BUTTONHOLE LENGTH

A buttonhole length should be just long enough to allow the button to slip through the opening without stretching it. You can estimate the proper buttonhole length by measuring the width plus the thickness of the button. To make sure the measurement is correct, cut a slit in a scrap of fabric the diameter of the button you intend to use. Increase length of opening until button slips through easily. This test is particularly advisable for buttons of unusual shape or thickness.

BUTTONHOLE INTERFACING

It is almost always wise to use an interfacing in the buttonhole area. An interfacing holds the fabric firmly so that a neat buttonhole may be stitched and keeps the finished buttonhole in shape. Interfacing is essential when the fabric is loosely woven or is a crepe or knit that stretches easily.

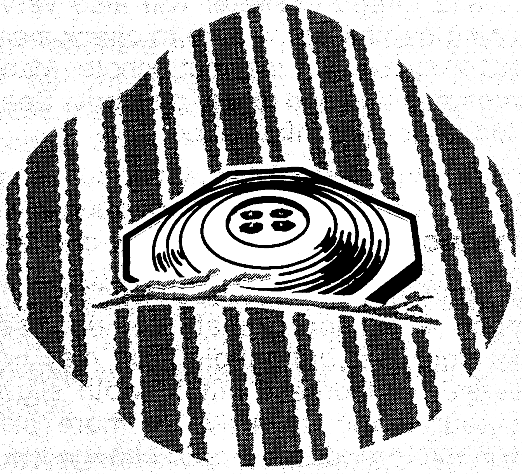
When planning your garment, remember that both round-end and bar-tack buttonholes are stitched through three thicknesses of fabric (garment, interfacing and facing) after the facing has been attached.

TEST SAMPLE

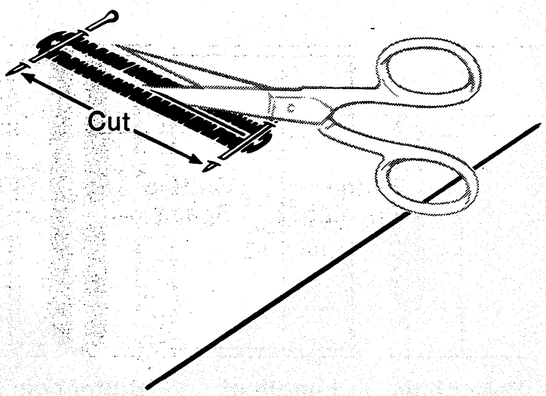
Always make a test buttonhole in a sample of your fabric to determine suitability of buttonhole style, buttonholing method, and machine settings. Be sure to duplicate the number of fabric layers in the garment and include interfacing if appropriate. Remember, too, that loosely woven and medium-weight fabrics require buttonholes with wider side stitching than firmly woven or lightweight fabrics. Finally, check to see that the opening for the button can be cut without damaging buttonhole stitching.

CUTTING BUTTON OPENING

Place a pin across the cutting space at each end of the buttonhole to protect end stitching. Use a pair of small, sharp scissors to cut the button opening. Insert blade in center of buttonhole cutting space and cut from this point in either direction.



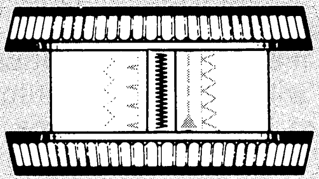
Testing Buttonhole Length

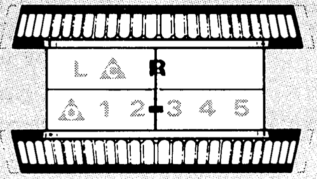


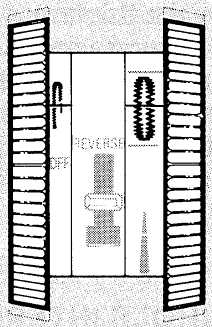
Cutting Button Opening

ROUND-END BUTTONHOLES

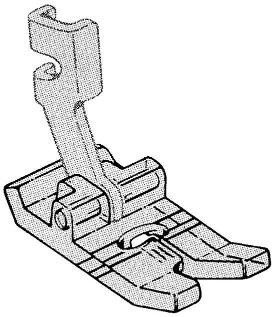
- Attach buttonhole foot
- Use zig-zag needle plate


PATTERN SELECTOR


NEEDLE POSITION
L
R
1 2 3 4 5
STITCH WIDTH


BUTTONHOLE
STITCH CONTROL
REVERSE
OFF

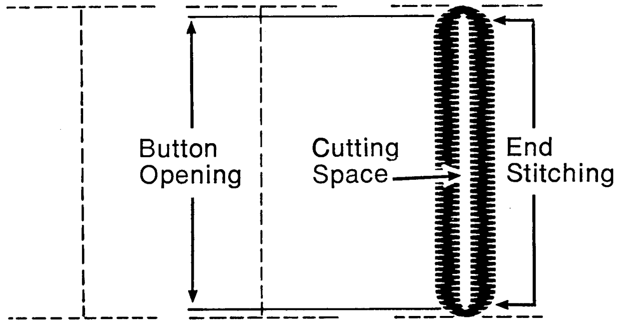
Make sure buttonhole dial is in ***OFF*** *position when you set or reset stitch control dial on* ▯ .



Buttonhole Foot

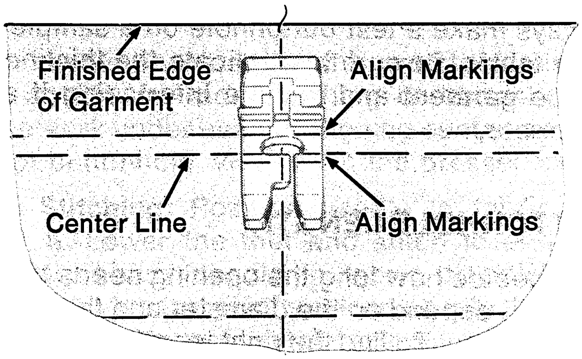
Buttonhole Length

First, decide how long the button opening must be. This will depend on the diameter and thickness of the button as explained on page 29. Then add 1/8 inch (3mm) for end stitching (1/16 inch or 1.5mm for each end of the buttonhole). This end-stitching allowance is approximate and should be increased slightly if the buttonhole is to be stitched twice. Fabric thickness and thread diameter will also vary end-stitching depths, so be sure to check measurements by making a test buttonhole. Mark buttonhole position and length on fabric. See page 28 for placement information.


Button Opening
Cutting Space
End Stitching
Buttonhole Length Guide Markings
Length of Button Opening
Buttonhole Stitching

Buttonhole Stitch Width

The stitch width setting, designated by — symbol, is an approximate setting; use it to make your test buttonhole. You may need to increase or decrease stitch width slightly to suit your fabric, to arrive at more pleasing buttonhole proportions, or to change the width of the buttonhole cutting space. When making stitch width adjustments, remember that as stitch width is increased, the cutting space in the center of the buttonhole is decreased.

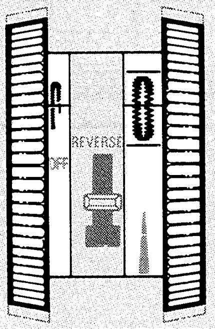

Finished Edge of Garment
Align Markings
Center Line
Align Markings

Starting Position

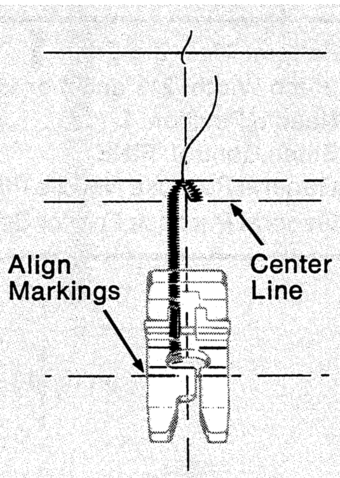
Procedure

- Place garment under buttonhole foot so that buttonhole position marking is centered.
- Align *center* gauge line of buttonhole foot with center line of garment.
- Lower the presser foot, and rotate buttonhole dial downward until symbol for step **1** is centered under red line (click indicates engagement).
- Start machine and let it complete step **1** of the buttonholing cycle; that is, stitching across the end and down the left side of buttonhole. *Stop machine when front gauge line on buttonhole foot reaches end-of-buttonhole guideline on garment.*
- Rotate buttonhole dial downward until symbol for step **2** is centered under red line.
- Start machine and let it complete step **2** of the buttonholing cycle; that is, stitching across the end and up the right side of buttonhole. *Stop machine when back gauge line on buttonhole foot is in line with the end-of-buttonhole guideline on garment.* Take one or two stitches if necessary to overlap stitching at starting point. For a smooth, satiny appearance and greater durability, stitch around the buttonhole a second time by repeating the two-step dial sequence.
- Remove work from machine, clip thread ends and cut button opening with sharp scissors.

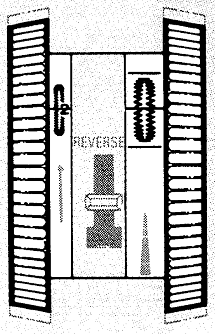
When buttonholes are completed, re-set dials for regular sewing. Make sure buttonhole dial is in **OFF** position.


REVERSE
OFF

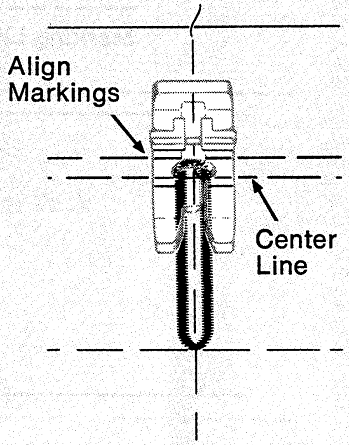
Step 1 Dial Setting


Align Markings
Center Line

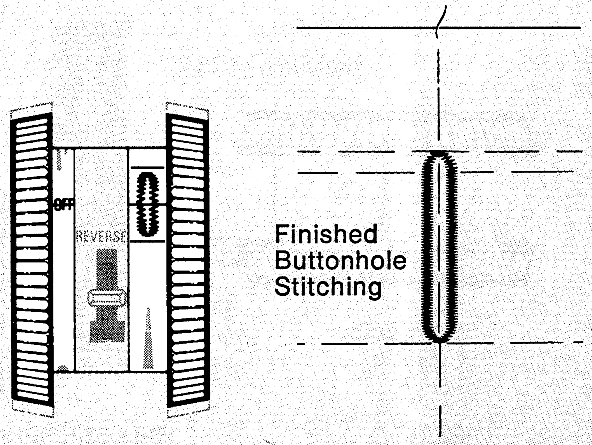
Presser Foot Position at End of Step 1



Step 2 Dial Setting


Align Markings
Center Line

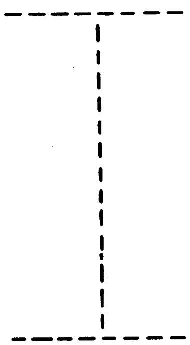
Presser Foot Position at End of Step 2


OFF
REVERSE
Finished Buttonhole Stitching

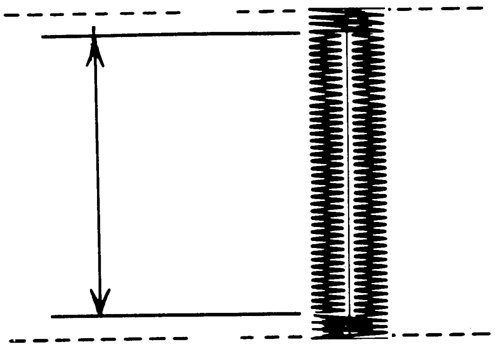
OFF Dial Position at End of Step 2

BAR-TACK BUTTONHOLES

- Pattern: Plain Zig-Zag
- Stitch Width: **2½** and **5** or to suit fabric
- Needle Position: **L**
- Stitch Control: **FINE**
- General Purpose Needle Plate
- General Purpose Foot or Special Purpose Foot



Marking Lines



Length of Cutting Space

Bar Tacks and Side Stitching

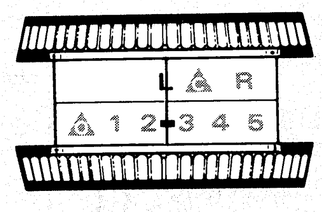
Always make a test buttonhole on a sample of your fabric. Be sure to duplicate the thickness of the garment and include interfacing if appropriate.

BUTTONHOLE LENGTH

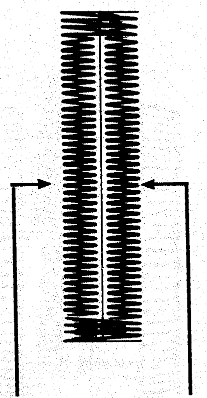
First decide how long the opening needs to be. This will depend on the diameter and thickness of the button. To find the right length, cut a small slit in a scrap of your fabric and gradually enlarge it until the button slips through easily. Then add at least 1/8 inch or 3mm (1/16 inch, or 1.5mm for each bar tack, the closing at each end of buttonhole), and mark the fabric as illustrated. This bar-tack measurement is approximate; on some buttonholes, you may need to increase it to arrive at pleasing proportions.

STITCH WIDTH SETTINGS

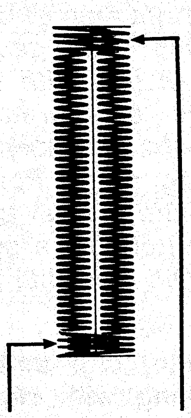
Next, determine the two stitch width settings that you will need: one for side stitching and one for bar tacks. Settings **2½** and **5** are illustrated below, although other combinations may be used, as long as combined widths of side stitching does not exceed the width of the bar tacks.



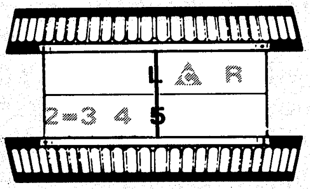
Selector at 2½



Side Stitching



Bar Tacks

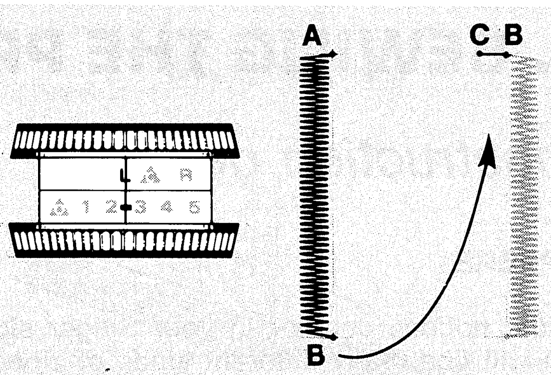


Selector at 5

PROCEDURE FOR MAKING BAR-TACK BUTTONHOLES

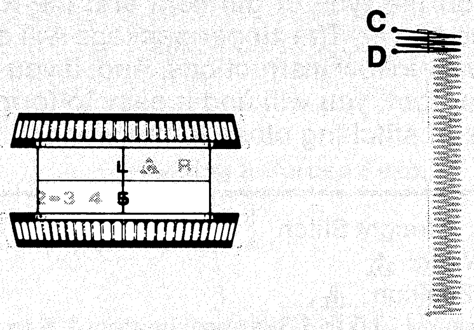
With needle position dial at **L,** set stitch width dial on **2½** for side stitching of buttonhole. Place work under needle, aligning center marking of buttonhole with slot in the presser foot.

Side Stitching: Position needle in fabric at point **A.** Lower the foot and stitch to end of marking. Leave needle in fabric at point **B.** Raise the foot and pivot work on needle. Lower the foot. Take one stitch without changing width setting, bring needle to point **C.**



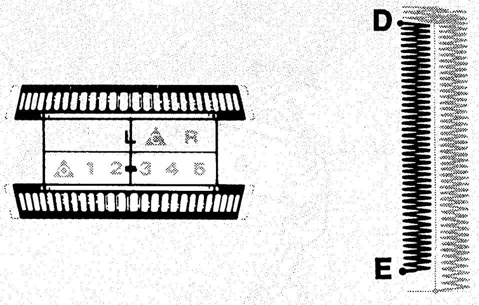
Side Stitching

Bar Tack: Adjust stitch width for bar tacks and take at least six stitches. Stop at point **D.**



Bar Tack

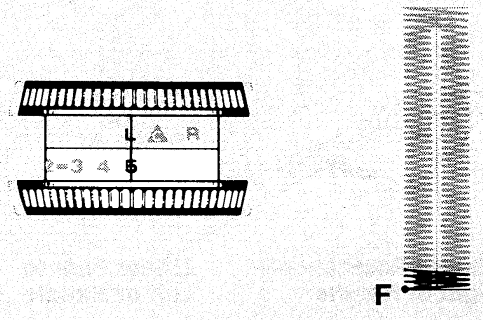
Side Stitching: Readjust stitch width for side stitching. Complete work to point **E.** Leave needle in fabric.



Side Stitching

Final Bar Tack: Adjust stitch width for bar tacks, and take at least six stitches ending at point **F**.

Fastening Stitch: To secure stitching, move stitch width dial to △ and take three stitches. Remove work, draw threads to underside, fasten and trim. Place a pin across the cutting space at each end of the buttonhole to protect end stitching. Use a small, sharp scissors to cut the button opening. Insert blade in center of buttonhole cutting space and cut from this point in either direction.



Final Bar Tack

6. SEWING THE PROFESSIONAL WAY

construction details

ZIPPERS

At the notions counter in your Singer store, you will find many different kinds of zippers, one of which will be just right for whatever you wish to sew. How the zipper is inserted will depend on the type of garment and the location of the zipper. The zipper package will contain easy-to-follow instructions. And, if you use the zipper foot, you will find it easy to form an even line of stitching close to the zipper.

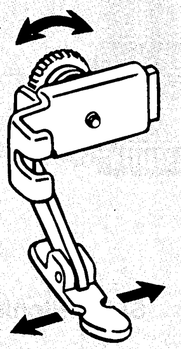
- Pattern: Straight Stitch ▲
- Stitch Width: 0
- Needle Position: C
- Stitch Control: **10** to **15** (approximately **1.5** to **2.5**)
- General Purpose or Straight Stitch Needle Plate
- Zipper Foot

Adjusting the Zipper Foot

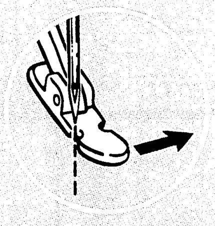
When the zipper is to the *right* of the needle:

1. Loosen the thumb screw at the back of the foot, and slide the foot to the *left* of the needle.
2. Check the position of the foot by turning the hand wheel to lower the needle into the side notch of the foot, making sure it clears the foot.
3. Lock the foot into position by tightening the thumb screw.
4. Lower presser bar. Make sure the needle clears the foot on all sides of the notch.

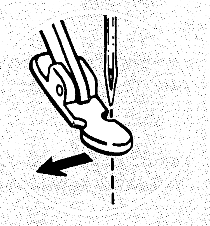
When the zipper is to the *left* of the needle, adjust the foot to the *right* of the needle in the same way.



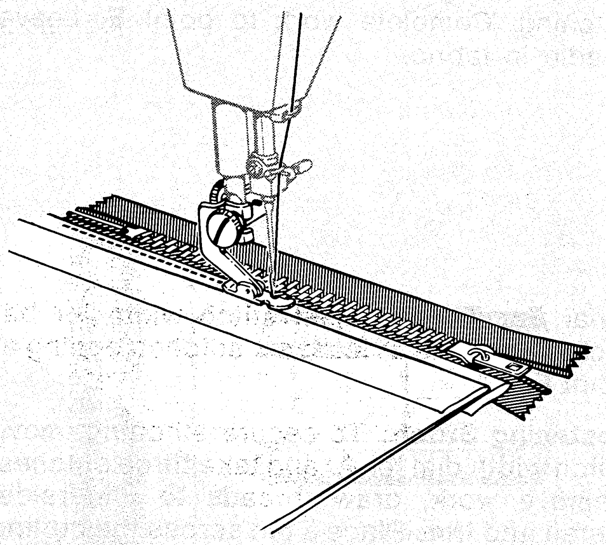
Adjusting the Zipper Foot



Zipper Foot to Right of Needle



Zipper Foot to Left of Needle



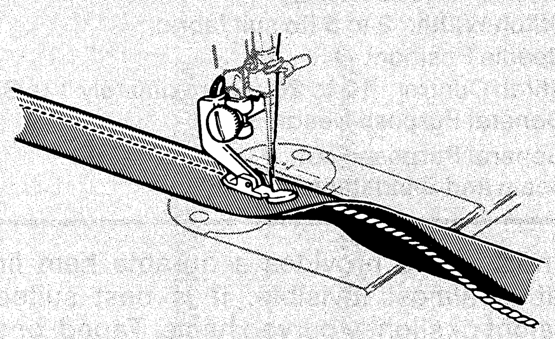
Zipper Insertion

CORDED SEAMS

The corded seam is a professional treatment for slipcovers, children's clothes, blouses, and lingerie. To make a corded seam, make the welting first (or buy it ready-made at a notions counter), then stitch it into the seam.

- Pattern: Straight Stitch ▲
- Stitch Width: ⊙
- Needle Position: C
- Stitch Control: Slightly longer than for regular seaming
- General Purpose or Straight Stitch Needle Plate
- Zipper Foot

Making the Welting



Stitch Close to Cord

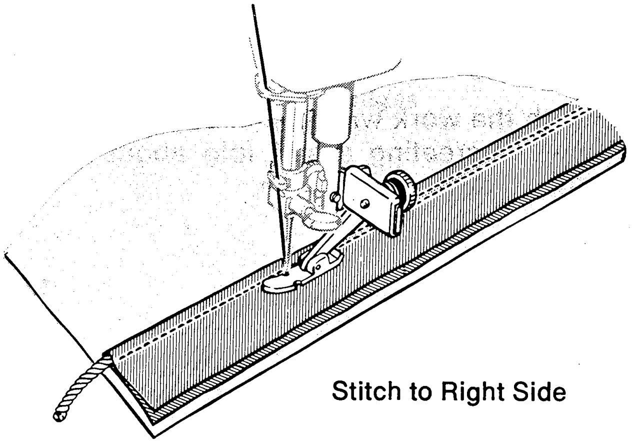
Making the Welting

1. Buy cable cord of desired size.
2. Cut bias strips of fabric to cover cord (width: three times the diameter of the cord plus 1-1/4 inches or 3.2cm). If it is necessary to sew strips together to obtain desired length, join on the lengthwise fabric grain.
3. Fold bias fabric strip over cord, raw edges even.
4. Adjust zipper foot for use on *left* side of needle.
5. Lower the presser foot.
6. Stitch close to cord (do not crowd stitching against cord), pulling gently on the strip, both in front and in back of the zipper foot.

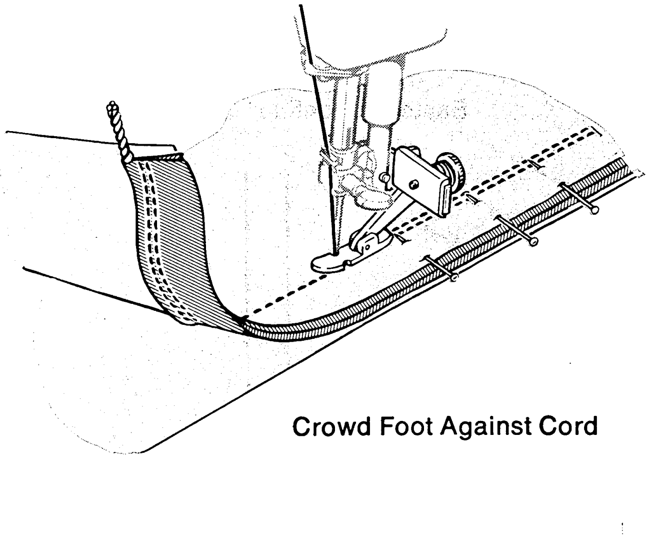
Stitching Welting into Seam

1. Attach zipper foot for use on *right* side of the needle so that the bulk of the fabric will fall to left.
2. Stitch welting to the right side of a single seam edge; guide the edge of the foot next to the cord but do not crowd.
3. Place the attached welting over the second seam edge, and pin or baste together.
4. Place work under needle, with the first stitching on top so that you can use it as a guide. Stitch, crowding foot against cord.

Making a Corded Seam

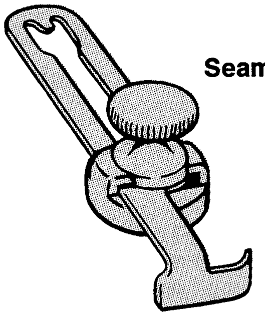


Stitch to Right Side



Crowd Foot Against Cord

BLINDSTITCH HEMS



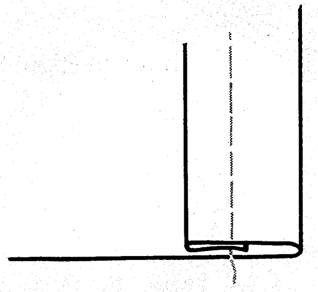
Seam and Blindstitch Hem Guide

- Pattern: Blindstitch
- Stitch Width: **2** to **5** (to suit fabric)
- Needle Position: ▲
- Stitch Control: **10** to **20** (approximately **1** to **3**)
- General Purpose Needle Plate
- General Purpose Foot
- Seam and Blindstitch Hem Guide

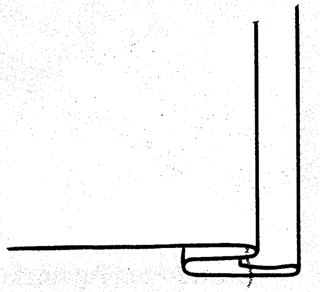
Blindstitching provides a durable hem finish that is almost invisible. It is best suited to straight or slightly curved hems. Taped, bound, turned, or unfinished hem edges can be blindstitched with equal ease. Blindstitching takes a little practice, however, so make a test sample first.

1. Mark, turn, and press hem in the usual way.
2. Baste a guideline 1/4 inch (6mm) from top of hem edge.
3. With the work wrong side up, turn the hem under, creating a soft fold about 1/4 inch (6mm) from top of hem.
4. Place hem edge over feed of machine with bulk of fabric to the left.
5. Screw seam and hem guide into hole at right of slide plate and adjust it over the right toe of the presser foot so that it rests next to the soft fold.
6. Stitch so that straight stitches fall on hem edge and sideward stitches pierce the soft fold. While stitching, guide the fold evenly against edge of hem guide.
7. When stitching is completed, swing guide out of position before raising presser foot. Remove basting stitch.

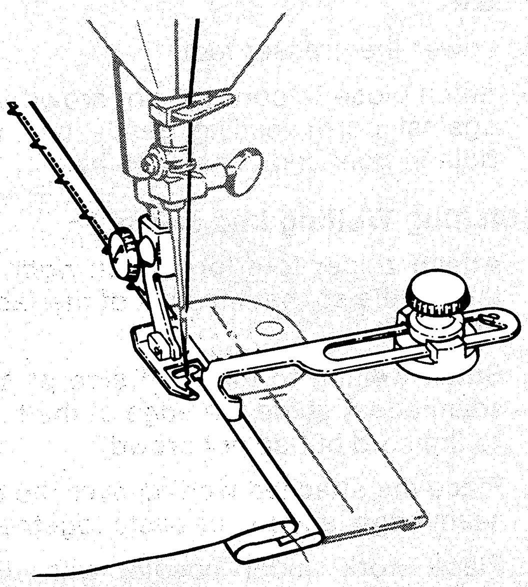
Blindstitch Hem



Basted Guideline



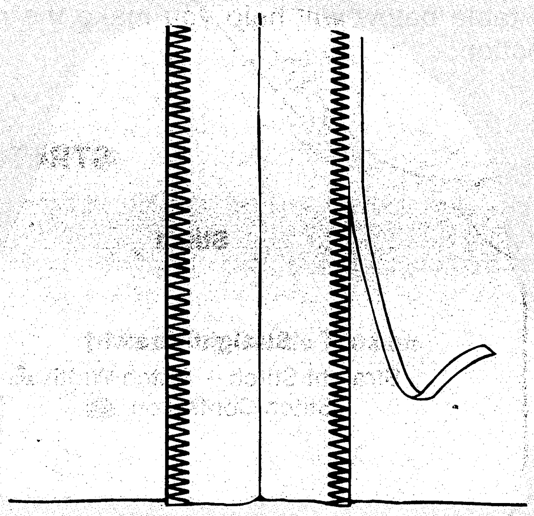
Soft Fold



Blindstitching a Hem

SEAMS IN FABRICS THAT RAVEL

Seam edges support the garment and should be given a durable finish if the fabric is likely to ravel. There are two ways of finishing seams in such fabrics: trimming seam edge or overedging. Make a test sample first to determine whether method #1 or method #2 best suits your fabric.



Trimming Edges

Method #1 — Trimmed Seam Finish

- Pattern: Plain Zig-Zag ▮ or
  Multi-Stitch Zig-Zag ⋮
- Stitch Width: **4** or **5**
- Needle Position: △
- Stitch Control: **8** to **20** (approximately **1** to **3**),
  to suit stitch and fabric
- General Purpose Needle Plate
- General Purpose Foot

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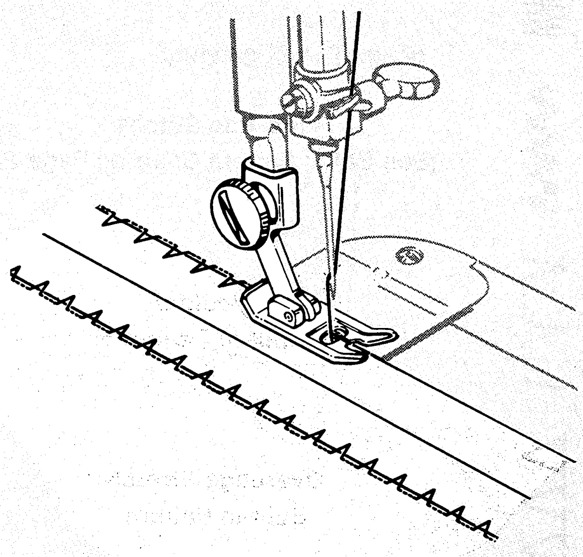
1. Select the stitch pattern that best suits your fabric.
2. Adjust stitch width and stitch length to give the most "open" stitch that will secure the fabric edge; avoid harsh over-stitching.
3. Place stitching near the edge of the seam allowance.
4. Trim seam edges evenly, as shown, after stitching is completed.



Overedged Finish

Method #2 — Overedged Seam Finish

- Pattern: Plain Zig-Zag ▮ , Blindstitch ⫶ , or
  Multi-Stitch Zig Zag ⋮
- Stitch Width: **4** or **5**
- Needle Position: △
- Stitch Control: **8** to **20** (approximately **1** to **3**),
  to suit stitch and fabric
- General Purpose Needle Plate
- General Purpose Foot

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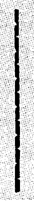
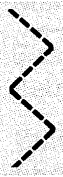
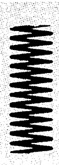
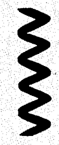
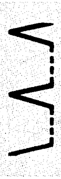
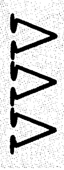
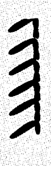
1. Adjust stitch length and stitch width to suit your fabric.
2. Trim seam edges evenly.
3. Place stitching over the trimmed edge of the seam allowance as illustrated.

sewing knit and stretch fabric

When you are sewing stretch fabrics, double-knit, tricot or jersey, choose one of the stretch patterns that build s-t-r-e-t-c-h into the seam. The table below will help you make the right selection.

Remember to use a ball-point Yellow Band needle, Style 2045, in the machine, and increase presser foot pressure when you are attaching elastic or sewing a synthetic knit or stretch fabric.

STRETCH STITCH CHART

Stitch	Where to Use
 **Straight Stretch†** Straight Stitch — Stitch Width △ Stitch Control on ⊜	Plain seams that s-t-r-e-t-c-h (press-open or closed construction) — Crotch seaming — Sleeve and gusset insertion — Flexible top stitching — Swim and ski suit construction — Attaching patch pockets — Repairing and reinforcing seams.
 **Multi-Stitch Zig-Zag** Built-in Pattern	Attaching elastic and stretch lace — Lingerie and swimsuit construction — Girdle seams — Seam finishes — Casings and waistband finishes.
 **Plain Zig-Zag** Built-in Pattern	All-purpose stretch sewing — Lingerie seams — Attaching stay tapes — Seam finishing — Edge finishing — Attaching stretch lace.
 **Ric-Rac Stitch†** (See Stitch Pattern Chart on Page 23)	Heavy-duty, all-purpose stretch sewing — Reversible topstitch applications.
 **Blindstitch** Built-in Pattern	Flexible blindstitch hemming — Overcast seam finishing — Shell hems in lingerie.
 **Overedge Stretch** Built-in Pattern	Overedge seams that stretch — Crotch seams — Waistband and seam finishes in shorts and slacks — Ski-suit, snow-suit, and swimsuit construction.
 **Slant Overedge Stretch Stitch†** (See Stitch Pattern Chart on Page 23)	Sweater and swimsuit construction — Overcast seams in bulky knits and stretch terry cloth — Attaching elastic and stretch lace — Edge finishes for seams, hems, and facings.

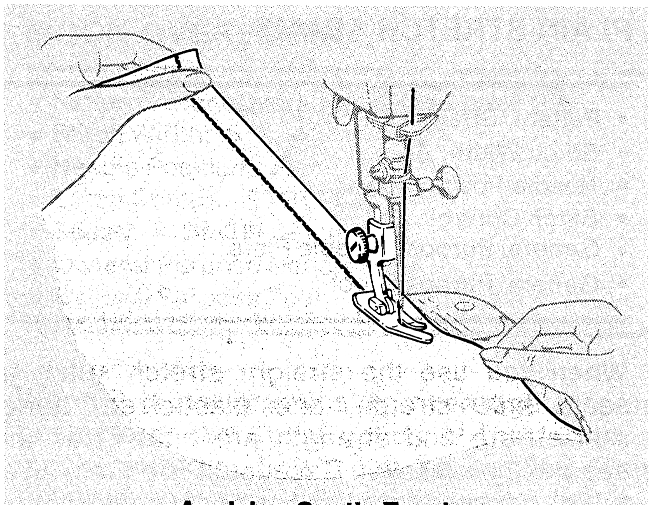
†This stitch is designed for strength and permanence and cannot be readily ripped out without risk of fabric damage.

GUIDING AND SUPPORTING FABRIC

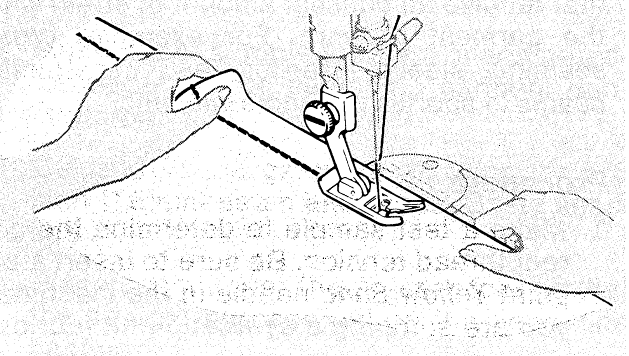
Most fabrics of stretch or knit construction need only to be guided in front of the presser foot when you use one of the stretch stitches. Some fabrics — nylon tricot and elasticized fabrics, for example — do require support while being stitched.

CAUTION: *Do not pull the fabric while you are stitching, as this may deflect the needle, causing it to break.*

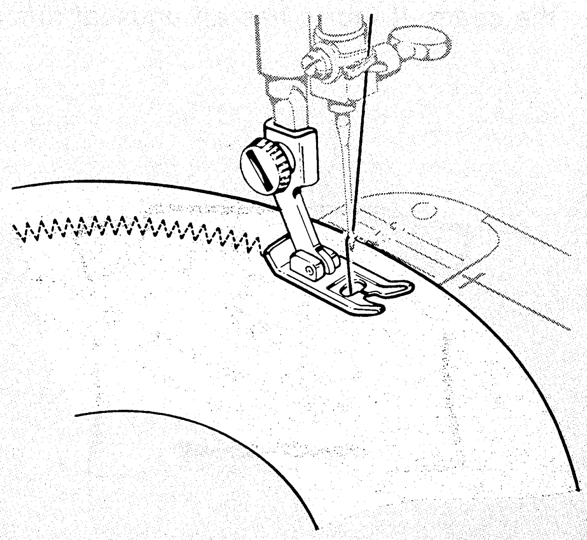
- For nylon tricot and similar synthetic knits, apply *gentle* tension by holding the seam in front and back of the presser foot as you sew.
- For elasticized fabric, stretch lace, and knits with an unusual amount of elasticity, apply *firm* tension in front and back of the presser foot to stretch the seam as the stitches are being placed.



Applying Gentle Tension



Applying Firm Tension



Applying Facing Finish

FINISHES FOR HEMS AND FACINGS

- Pattern: Multi-Stitch Zig-Zag or
  Slant Overedge Stretch (see page 23)
- Stitch Width: **5**
- Needle Position:
- Stitch Control: **8** to **20** (approximately **1** to **3**)
  for Multi-Stitch Zig-Zag or
  for Slant Overedge Stitch
- General Purpose Needle Plate
- General Purpose Foot

Hem and facing edges in knit and stretch fabrics will be less apt to press through and mark when given a flat edge-finish. Edge finishing with the slant overedge stitch or multi-stitch zig-zag eliminates the bulk of turned-in edges and retains fabric flexibility.

1. Make a test sample to check thread tension and stitch length if you are using the multi-stitch zig-zag.
2. Place stitching about 1/2 inch (1.3cm) from hem or facing edge.
3. Press after stitching and trim away excess fabric close to the stitching line.

PLAIN STRETCH SEAMS

- Pattern: Straight Stitch ⁞▲
- Stitch Width: ▲
- Needle Position: ▲
- Stitch Control: ⊜
- General Purpose Needle Plate
- General Purpose Foot

When you use the straight stretch stitch to seam knit, stretch, and elasticized fabric, *s-t-r-e-t-c-h* and strength are built in as the seam is being sewn. Because it is equally useful for closed or press-open seam construction and will not break thread under stress, the straight stretch stitch is also good for seams that receive an unusual amount of strain when the garment is worn. For example: crotch seaming, sleeve insertion, and construction seams in sportswear and swimsuits.

Procedure

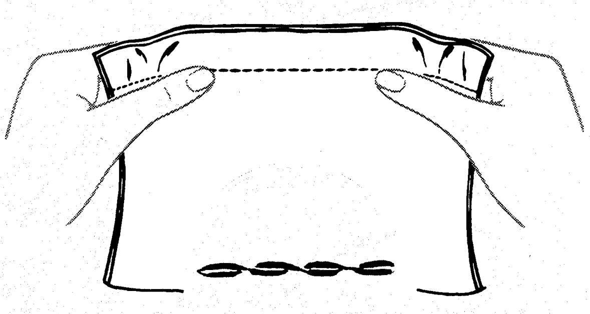
1. Make a test sample to determine the correct thread tension. Be sure to insert a ball point *Yellow Band* needle in the machine if you are stitching a synthetic knit fabric.
2. Stitch and guide fabric as you do for plain seams stitched with the regular straight stitch, letting the machine make the back-and-forth stitches that give *s-t-r-e-t-c-h* to the seam. If fabric has an unusual amount of elasticity, it should be stitched under tension as instructed on **page 39** (Guiding and Supporting Fabric).
3. Press seam as when using the regular straight stitch.

LINGERIE SEAMS

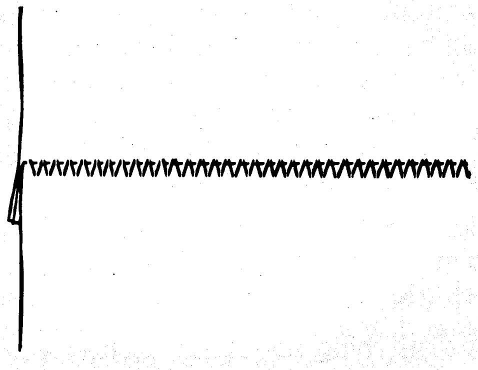
- Pattern: Plain Zig-Zag ⦚
- Stitch Width: **1** to **2½**
- Needle Position: ▲
- **Stitch Control: 12 to 20 (approximately 1 to 2)**
- General Purpose Needle Plate
- General Purpose Foot

To make a lingerie seam durable and flexible, use the plain zig-zag stitch at a narrow width setting. This seam treatment is particularly suitable for bias seams. When seaming nylon tricot, insert a *Yellow Band* needle in the machine before you begin to sew.

- Straight-stitch the seam (dials set on black ▲ symbols) on wrong side of fabric.
- Press both seam allowances in the same direction.
- From the right side, topstitch with narrow zig-zag stitching, letting the needle alternately enter the seam line and the seam thickness.



Straight Stretch Stitching



Lingerie Seam

OVEREDGED SEAMS

- Pattern: Overedge Stretch
- Stitch Width: **5** only†
- Needle Position: ▲
- Stitch Control: **STRETCH**
- Speed: In **SLOW** range
- General Purpose Needle Plate
- Overedge Foot

Seams in knit and stretch fabrics can be joined and finished in one operation when you use the overedge stretch stitch.

Procedure:

1. Make a test sample before beginning garment construction to test machine settings. Be sure to duplicate the cut of the garment seam in your test, and use a ball-point *Yellow Band* needle if you are sewing a synthetic knit fabric.
2. Cut and fit the garment in the regular way, using a 5/8 inch (16mm) seam allowance. Baste seam line.
3. Trim seam edge evenly to a scant 1/4 inch (6mm) from seam-line basting.
4. Place trimmed seam under the overedge foot so that the straight stitches fall on the basted seam line and zig-zag stitches fall over the seam edge.

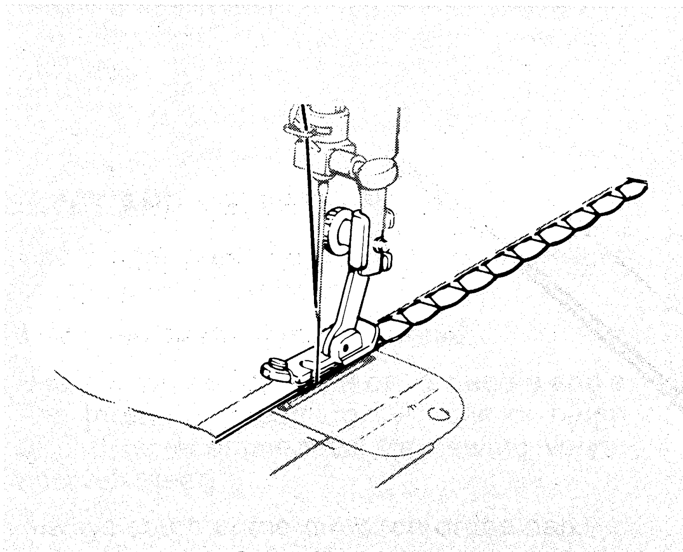
MOCK OVEREDGING

- Pattern: Slant Overedge (see page 23)
- Stitch Width: **5**
- Needle Position: ▲
- Stitch Control: **STRETCH**
- Speed: In **SLOW** range
- General Purpose Needle Plate
- General Purpose Foot

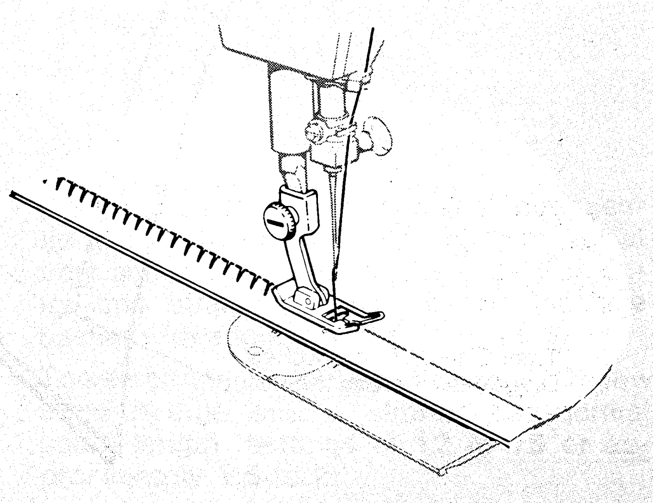
When it is not practical to overedge a seam because of the construction of the fabric, a mock overedge finish can be applied. This finish is appropriate for bulky knits, fine tricots, and fabrics that curl or ravel.

Procedure:

1. Make a test sample to check machine adjustments before beginning garment construction.
2. Cut and fit the garment, allowing for 5/8 inch (16mm) seam allowance. Baste seam line.
3. Place seam under the presser foot so that the straight stitches fall on the seam-line basting.
4. Press after stitching and trim away fabric to produce a narrow seam. When the seam supports the garment, omit the trimming step.



Overedged Seam



Mock Overedging

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†If a narrower stitch width is desired, as for overedging fine fabric, use the general purpose foot in place of the overedge foot.

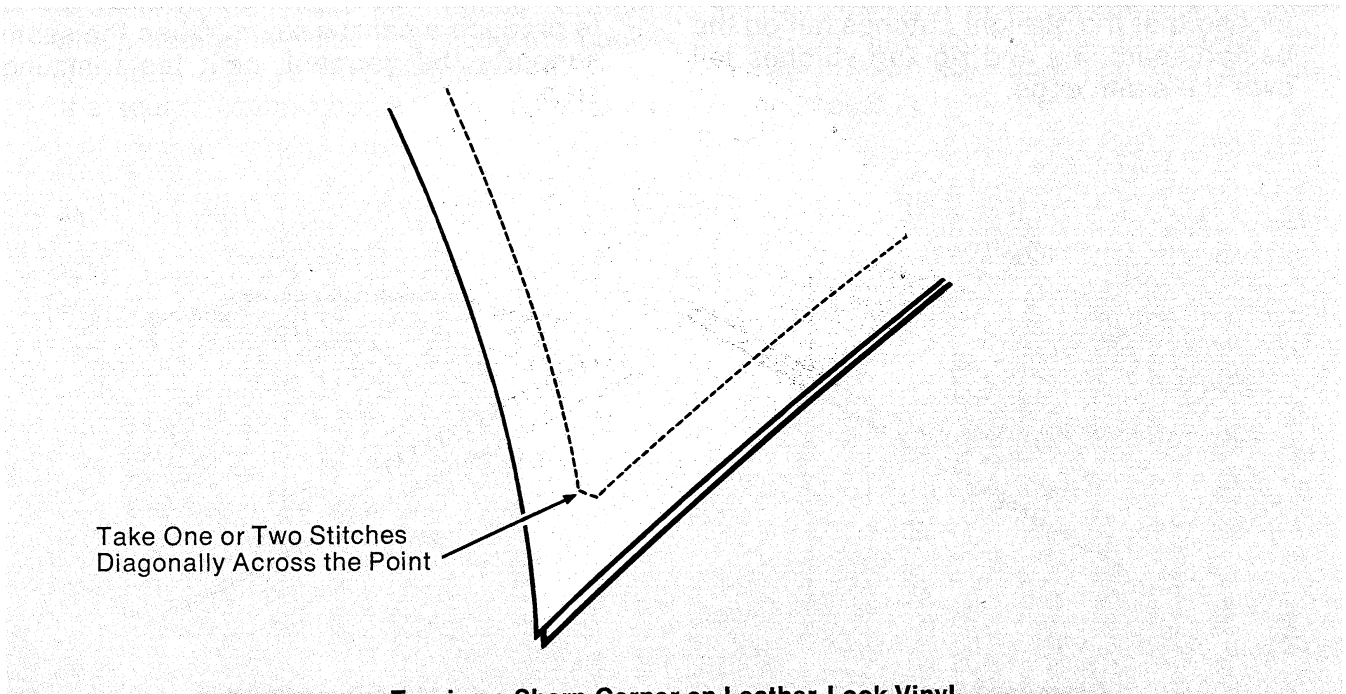
hints on sewing special fabric

LEATHER-LOOK VINYL†

- Use masking tape or zipper adhesive tape instead of pins or basting to hold seams, zippers and hems in place for stitching.
- Stitch with a long stitch (**8** to **10** straight stitches per inch). A short stitch may cut the fabric.
- Sew with a steady, even pace and stitch accurately. Seams cannot be ripped out without leaving needle marks in the fabric.
- The shiny side of some vinyls tends to stick to metal surfaces. Use a strip of tissue paper between the fabric and metal machine surfaces to prevent this.
- Reinforce button and buttonhole areas with interfacing. Bound buttonholes are the best choice for vinyls with knit backing.
- Topstitching holds seams and garment edges smooth and flat, and adds a decorative note.
- For sharp points on collars and lapels, take one or two stitches diagonally across the point to allow enough space to enclose the seam edge smoothly.

CIRE (Wet-Look Taffeta and Tricot)†

- Do not use pins in any area of the garment that will be visible when completed.
- Use masking tape or zipper adhesive tape instead of pins or basting to hold seams, zippers and hems in place for stitching.
- Stitch accurately; seams cannot be ripped out because needle marks remain in the fabric.
- Sew seams under gentle tension by holding fabric slightly taut at front and back of needle.
- Stitch ciré taffeta with a fairly long stitch (**8** to **10** straight stitches per inch) and use an enclosed edge finish for seams and hems.
- Stitch ciré knits with a medium-length stitch (**12** straight stitches per inch) and use a fine ball-point *Yellow Band* needle.
- Machine-worked buttonholes (as well as bound buttonholes) can be made in ciré fabric. Always use an interfacing and make sure the close zig-zag stitches do not cut the fabric.



Turning a Sharp Corner on Leather-Look Vinyl

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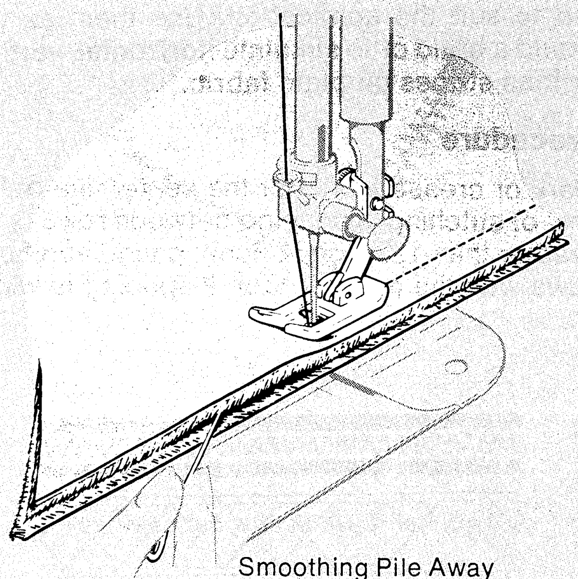
†The Even-Feed Foot described on page 58 is designed to aid in sewing this fabric.

DEEP-PILE FABRICS (Fake Fur) †

- Pin, rather than baste, seams. Place pins at short intervals at right angles to the seam line. Pins with colored heads are easy to see and remove.
- Sew in direction of nap.
- Stitch with a fairly long machine stitch (settings of **8** to **10** or approximately **2.5** to **3**) and use polyester/cotton thread in a size 14 or 16 Style 2020 needle.
- As seam is stitched, smooth pile away from seam allowance with a darning needle or upholstery pin.
- After stitching seams with a 5/8 inch (1.6cm) seam allowance, use small hand scissors to shear pile from entire seam allowance to reduce bulk.
- Stitch 1/4 inch (6mm) preshrunk tape into neckline and shoulder seams for stability and reinforcement, or stitch with the straight stretch stitch (stitch control set on ⊜).
- Leather and leather-look fabrics complement fur fabrics; use them for bound buttonholes and easy button loops.
- Coat hems are less bulky if narrow and finished with a 3 inch (7.6cm) fabric facing or gros-grain ribbon.
- Slash through the center fold of darts and finger-press open or stitch with a narrow zig-zag stitch and trim away excess fabric after stitching.



Smoothing Pile Away from Seam Allowance

Stitching Deep-Pile Fabrics (Fake Fur)

VELVET AND VELVETEEN†

- Use a light pressure dial setting to prevent crushing pile.
- Mark and baste with silk thread.
- Use a Style 2020, size 9 or 11 needle and a fine thread for seaming. "A" silk or nylon thread is recommended for sewing velvet and velveteen.
- Always stitch in the direction of the nap.
- Pin or hand-baste seams and sew under gentle tension by holding fabric slightly taut at front and back of needle (see page 20). Extra-long straight seams may be machine basted with a long, wide zig-zag stitch.
- To sew panne velvet, use a ball-point *Yellow Band* needle and a shorter-than-normal stitch length (settings of **12** to **15** or approximately **1.5** to **2**).

†The Even Feed Foot described on page 58 is designed to aid in sewing this fabric.

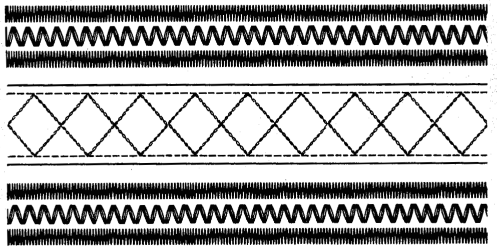
decorative touches

BORDER DESIGNS

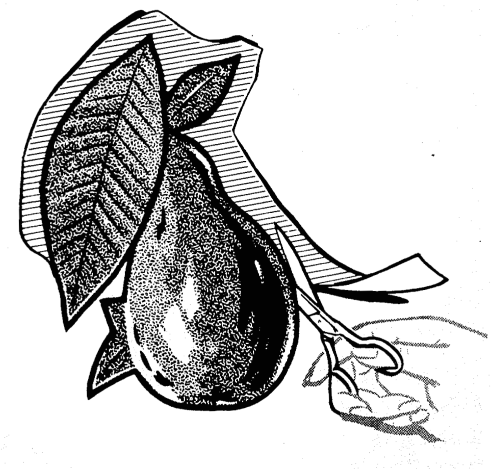
Border designs that add a decorative touch to wearing apparel and household items can be created by combining different types of straight stitching and zig-zag stitching. Simple or elaborate, delicate or bold, they can be varied to suit the application. Use them as you would a braid or to simulate horizontal, vertical or bias stripes on plain fabric.

Procedure

Mark or crease fabric for the center line of first row of stitching. If spacing between rows is not greater than 1/2 inch (1.3cm), gauge additional rows with the presser foot. If spacing is wider, mark for each line of stitching. Use a backing of crisp lawn, organdy or organza and be sure to make a test sample on a swatch of your fabric to check stitch settings and thread tension.



Border Design



Method #1—Trimming after Stitching

APPLIQUE

Applique adds beauty and interest to clothing and household linens. You can create your own design, trace a simple outline from a coloring book, or use a motif cut from a printed fabric. Fabrics of like or different texture combine equally well.

Use a closely spaced, fairly narrow zig-zag stitch. Although you may vary stitch width to accommodate fabric weave or texture, never allow the stitch to be too wide.

When appliqueing, make a test sample to help you decide which of the following methods is more appropriate for your fabric and design.

Preparation

- Baste applique design to fabric.
- Outline design with straight stitching (use a short stitch).
- Remove basting and press.
- Attach special purpose foot and general purpose needle plate.

Method #1

1. Set stitch width dial. Adjust stitch length in the **FINE** area of the stitch control.
2. Outline the entire design with applique stitching.
3. Cut away the fabric on the outer edges of the stitching with embroidery scissors.

Method #2

1. Trim outside edges close to straight stitch outline of design.
2. Set stitch width dial. Adjust stitch length in the **FINE** area of the stitch control.
3. Overedge the design with satin stitching. This step will produce a smooth, lustrous finish that requires no additional trimming.

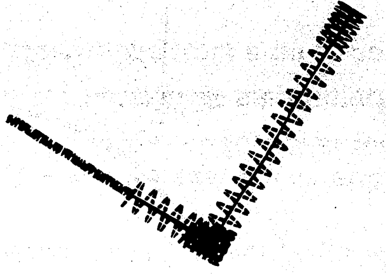
keeping up appearances

Many zig-zag stitch patterns are just as useful for mending as they are for creative sewing. The multi-stitch zig-zag (a built-in pattern) forms a firm, flexible bond that is ideal for repairing tears.

MENDING A TEAR

- Pattern: Multi-Stitch Zig-Zag
- Needle Position: ▲
- Stitch Width: **2** to **5**
- Stitch Control: Approximately **20** (**1** to **1.5**)
- General Purpose Needle Plate
- General Purpose Foot

1. Trim ragged edges.
2. Place underlay on the wrong side of tear for reinforcement. (It is best not to baste or pin the underlay, since you will be bringing the edges together in the next step.)
3. Stitch on the right side, bringing the edges of the tear together. Shorten stitch length at ends and corners to give extra strength.
4. Trim underlay.



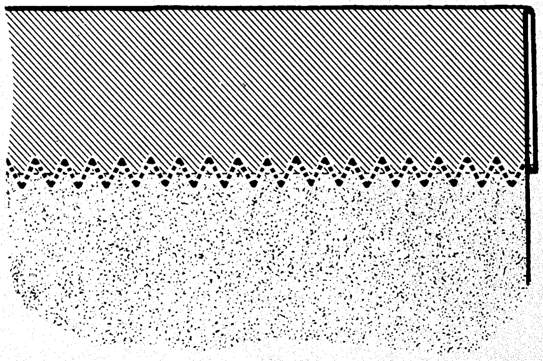
Tear Mended with Multi-Stitch Zig-Zag

BLANKET BINDING

Often you can make an old blanket look almost new by replacing the binding. A zig-zag stitch pattern such as the plain zig-zag or multi-stitch zig-zag or the semaphore *Flexi-Stitch* pattern may be used.

- Pattern: Desired zig-zag stitch (see above)
- Stitch Width: **5**
- Needle Position: ▲
- Stitch Control: ⊜ for *Flexi-Stitch* pattern, or approximately **15** to **20** (**1.5**), to suit stitch and fabric
- Pressure: **NORM** or less
- General Purpose Needle Plate
- General Purpose Foot or Even Feed Foot †

1. Make a sample to determine correct dial settings. Reduce pressure on fabric and increase stitch length, if necessary, so that blanket feeds freely.
2. Remove worn binding and baste new binding securely in place.
3. Stitch, and remove basting.



Blanket Binding

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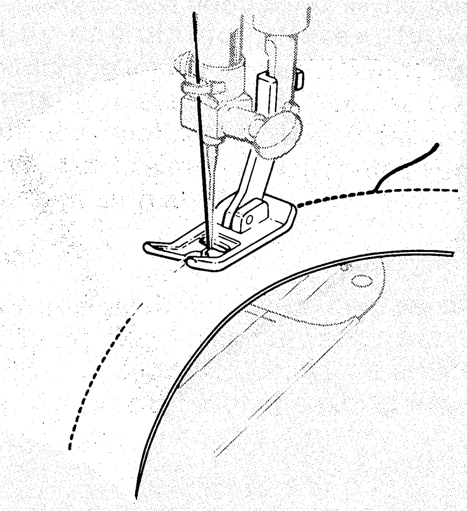
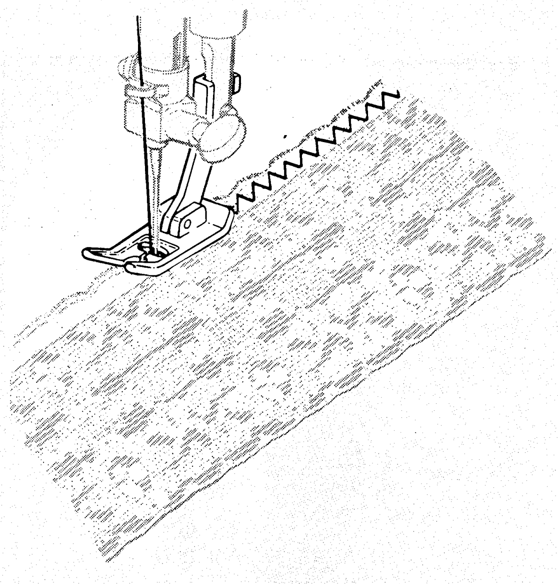
†For best results in blanket binding, the Even Feed Foot is recommended (available for purchase, see page 58).



Seam Repair



Stretch Garment Repair

REPAIRING SEAMS

Breaks in press-open garment seams can be repaired quickly and easily when you use the straight stretch stitch (stitch pattern ▲, stitch width △ and stitch control on ⊜ setting). This reinforced stitch is both strong and flexible. It is ideal for knit and stretch fabrics and particularly useful for repairing or strengthening curved seams or seams that will receive strain when worn.

1. Make a test sample to check dial settings.
2. Remove loose thread along the break and press the seam edges together.
3. Re-stitch along original seam line, guiding seam under presser foot without stretching fabric, letting the machine move the fabric to make the back-and-forth stitches that give *s-t-r-e-t-c-h* to the seam. Overlap stitching one inch at each end. Press seam open.

REPAIRING STRETCH GARMENTS

- Pattern: Plain Zig-Zag ⦚
- Needle Position: △
- Stitch Width: **3** to **5**
- Stitch Control: **20** (approximately **1** to **1.5**) or to suit fabric
- General Purpose Needle Plate
- General Purpose Foot

Seams and hems in stretch and elasticized garments retain their elasticity when stitched with the plain zig-zag stitch. This stitch is particularly effective when used in topstitch applications (as shown) or to overedge. Make a test sample to check dial settings.

Bar Tacks

Bar tacks, to reinforce points of strain, are made with the plain zig-zag stitch at satin stitch length. Use them at pocket corners, to attach garters, secure shoulder straps, belt loops and zipper openings.

DARNING

Worn or torn spots on children's clothes, knits, and household linens can be darned effortlessly and quickly with little practice. You may choose to darn either with or without an embroidery hoop. When greater control is needed, an embroidery hoop is usually best.

Without Embroidery Hoop

- Pattern: Straight Stitch ⁞▲
- Needle Position: ▲
- Stitch Width: △
- Stitch Control: **10** to **15** (approximately **1.5** to **2.5**)
- Pressure: **DARN**
- General Purpose Needle Plate
- General Purpose Foot

---

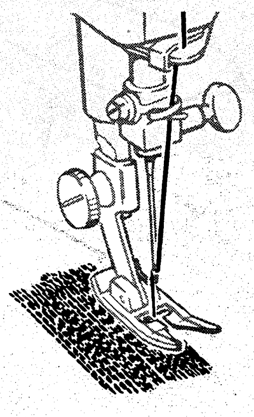
1. If area to be darned is open, baste an underlay in place.
2. Place area to be darned under presser foot; lower presser foot and start stitching, alternately drawing fabric toward you and pulling it *gently* away from you.
3. Continue this forward and backward motion as you fill the area with parallel lines of stitching. For additional strength, cover area with crosswise lines of stitching.

With Embroidery Hoop

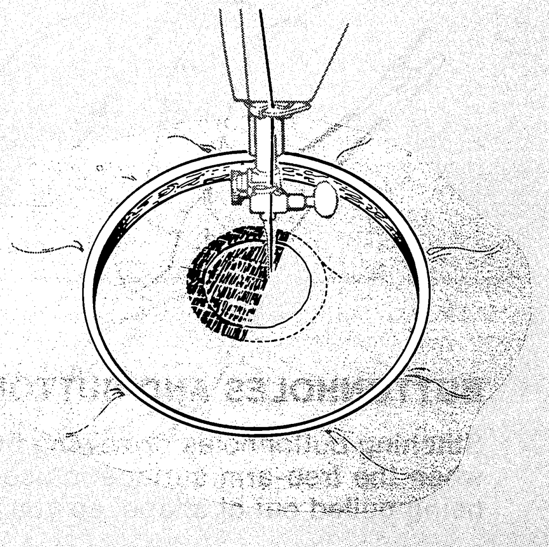
- Pattern: Straight Stitch ⁞▲
- Needle Position: ▲
- Stitch Width: △
- Stitch Control: In **FINE** area
- Feed Cover Needle Plate
- No presser foot

---

1. Trim ragged edges from area to be darned.
2. Center worn section in embroidery hoop.
3. Position work under needle over feed cover plate and *lower presser bar to engage tension.*
4. Hold needle thread loosely with left hand, turn hand wheel over and draw bobbin thread up through fabric. Hold both thread ends and lower needle into fabric.
5. Outline area to be darned with a single line of straight stitches for reinforcement.
6. Stitch across opening, moving hoop under needle at a slight angle from lower left to upper right. Keep lines of stitching closely spaced and even in length.
7. When opening is filled, cover area with crosswise lines of stitching.

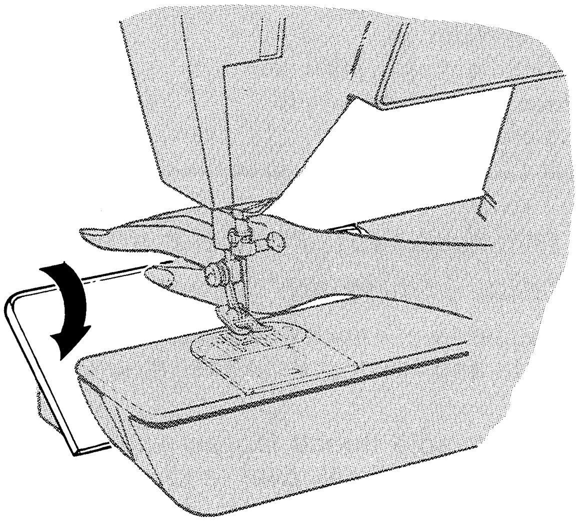


Darning without Embroidery Hoop



Darning with Embroidery Hoop

7. FREE-ARM SEWING

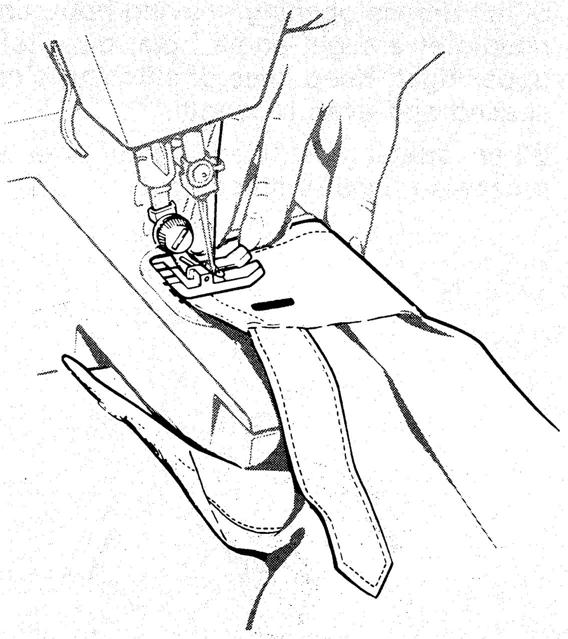


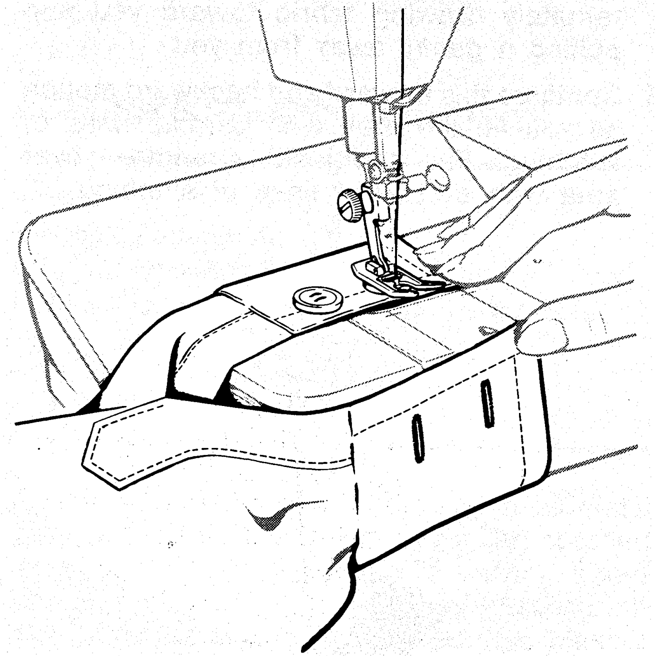
Press Down on Corner of Hinged Plate

Fabric handling, when sewing tubular and hard to reach garment areas is simplified when you convert your machine to free-arm sewing. A few of the sewing jobs for which you will find the free arm particularly useful are shown below and on pages 49 through 51. You will discover many more for yourself.

To convert the machine for free-arm sewing, unlock the hinged plate as instructed on page 7. Then simply press down on the corner of the hinged plate as illustrated.

To convert your machine back to flat-surface sewing, raise the hinged plate of the machine until it snaps into flat-surface position.



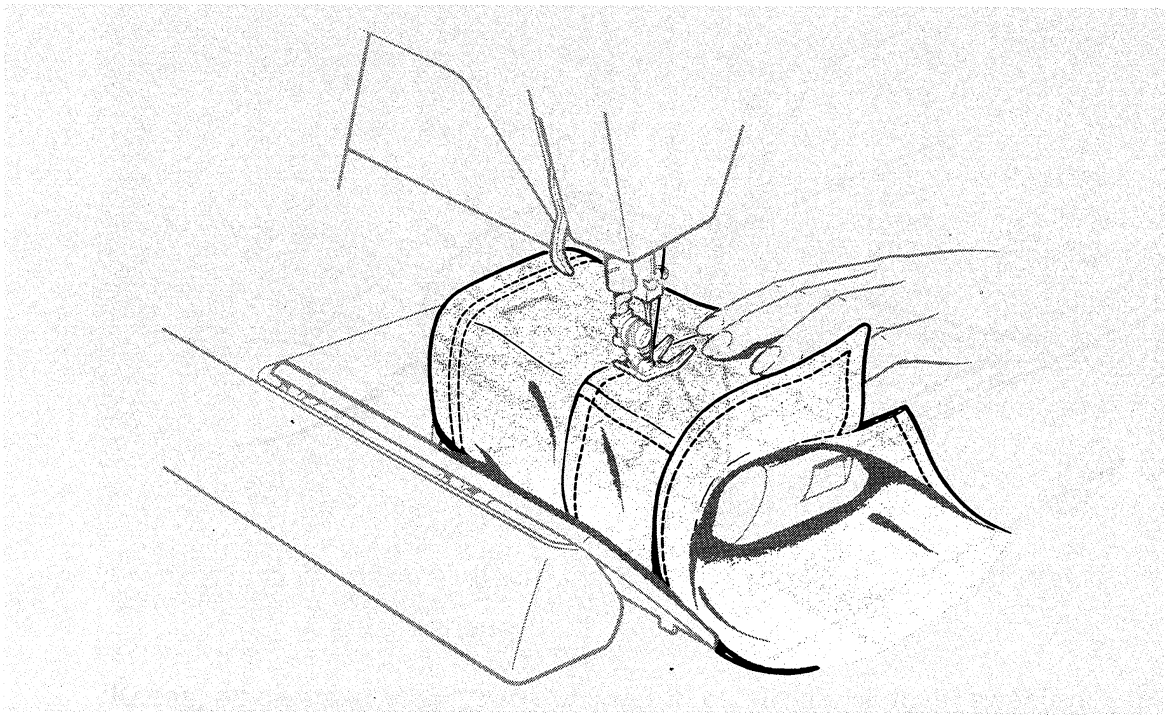


BUTTONHOLES AND BUTTONS

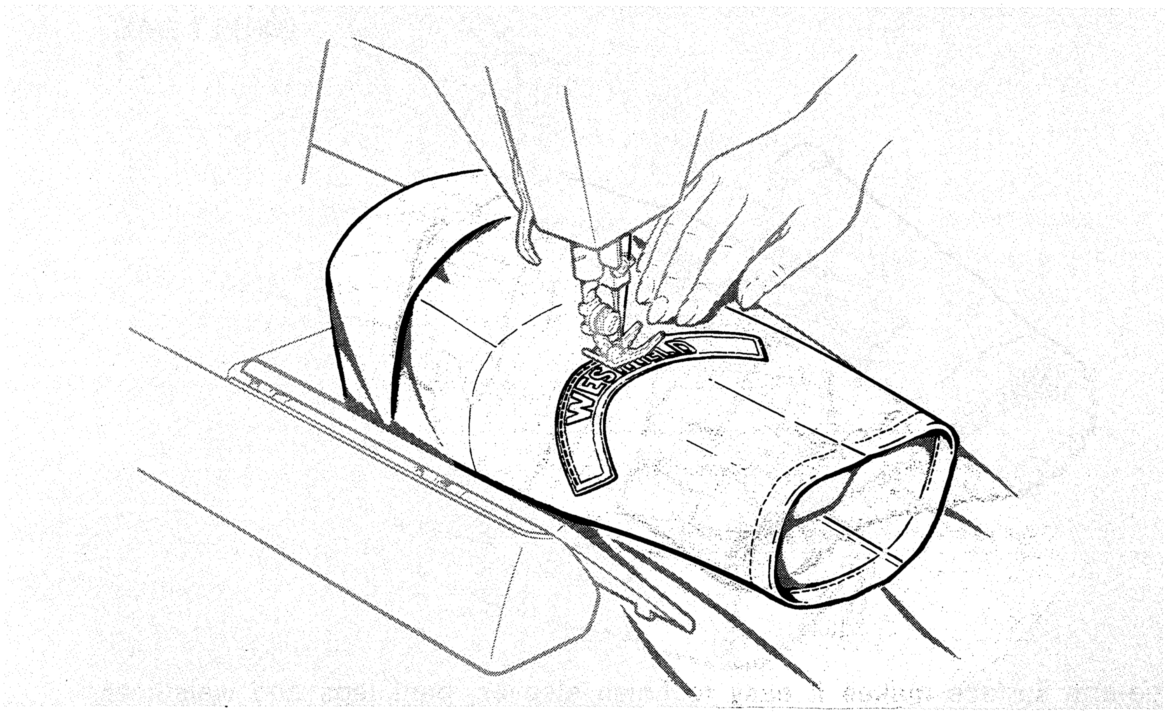
Stitching buttonholes or sewing buttons on a cuff or neckband is no longer a task when the free-arm surface is used. Cuffs slip around the sewing surface without being pulled out of shape, so you can see and handle the stitching area easily.

For buttonholing, follow the instructions that start on page 28. Button-sewing instruction is given on page 27.

SLEEVES

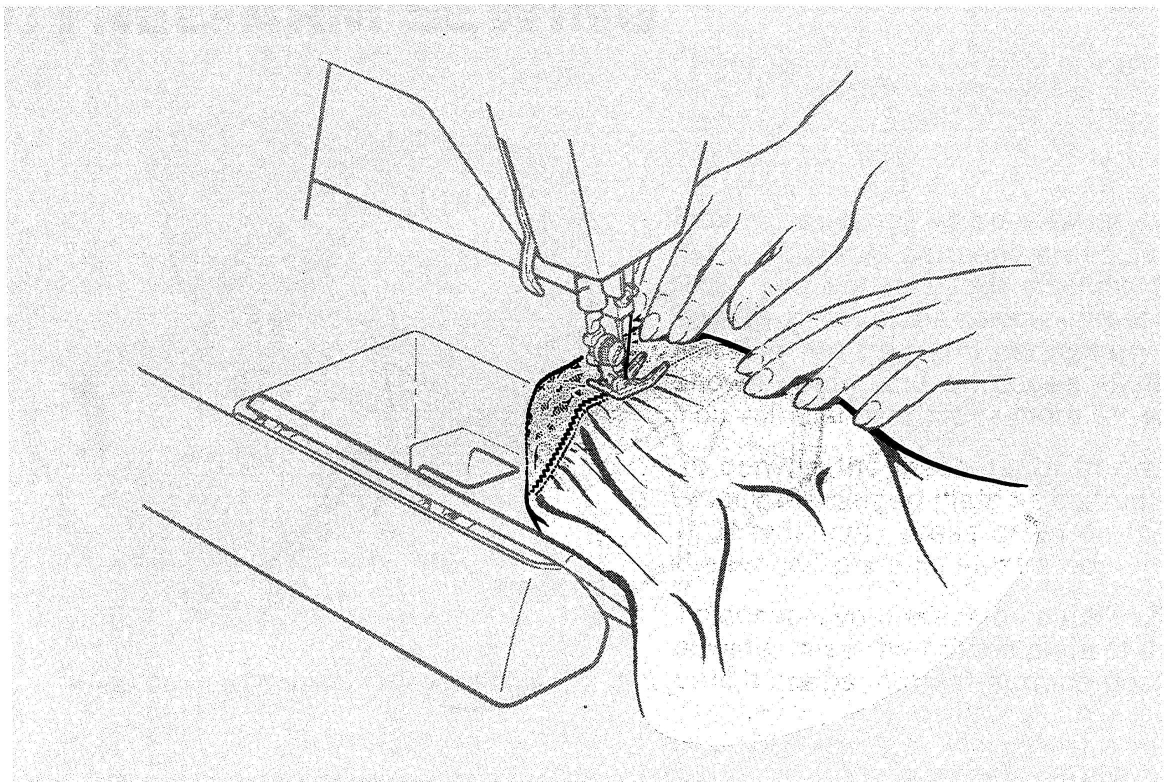


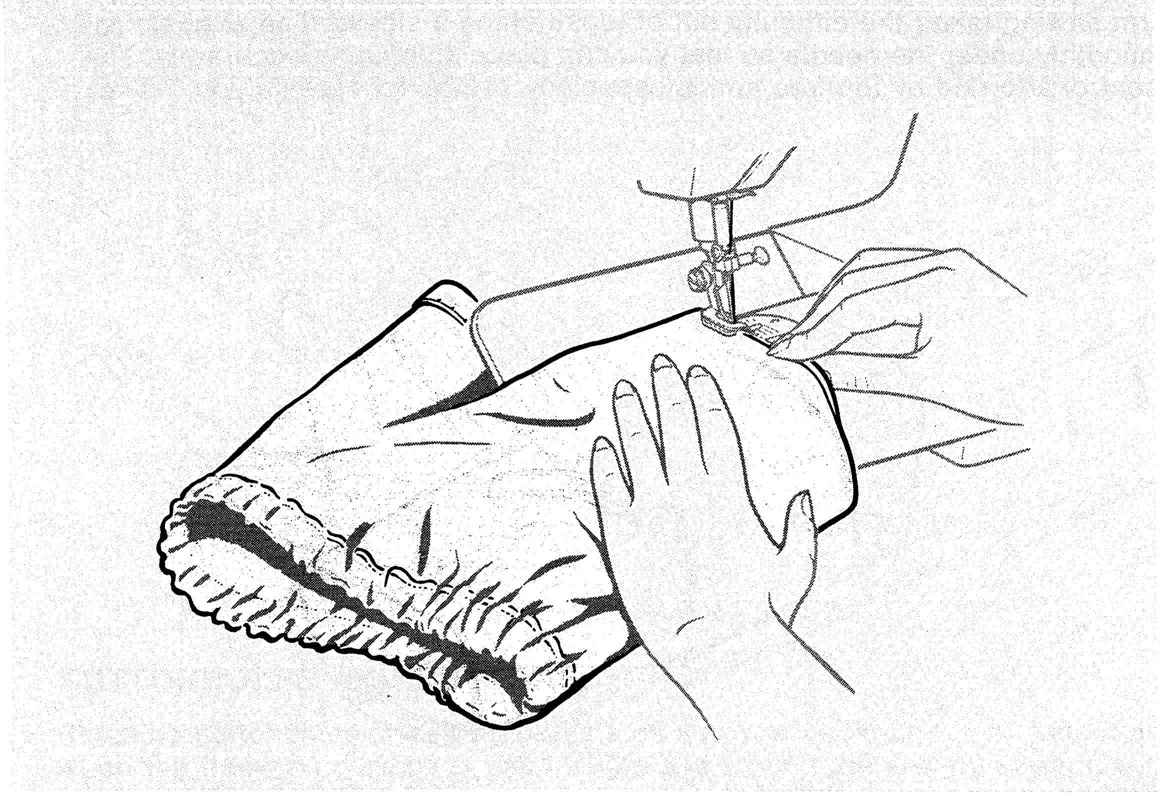
Free-arm sewing takes the difficulty out of topstitching a sleeve. The armhole rotates smoothly under the needle so that you can place stitching a accurately. The extra control afforded by the free arm is especially helpful for topstitching flat-fell seams.



Badges, emblems and insignia of all sizes and shapes can be quickly attached to shirts and uniforms by slipping sleeve or hard-to-reach area over the sewing surface.

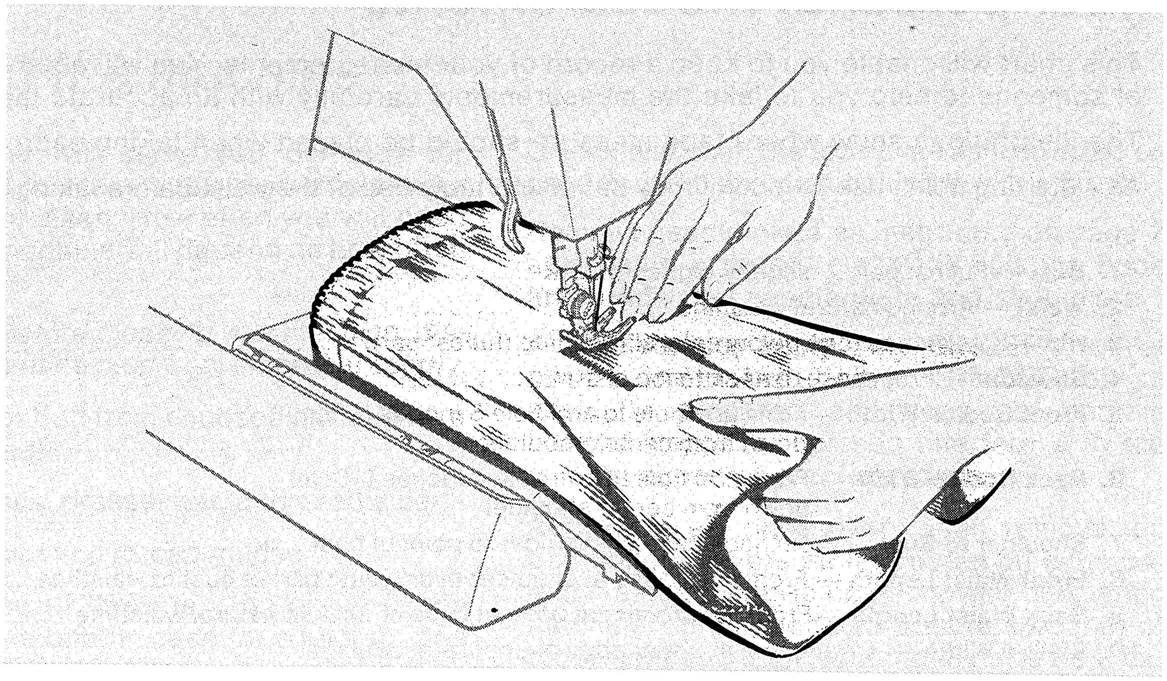
EDGE FINISHES





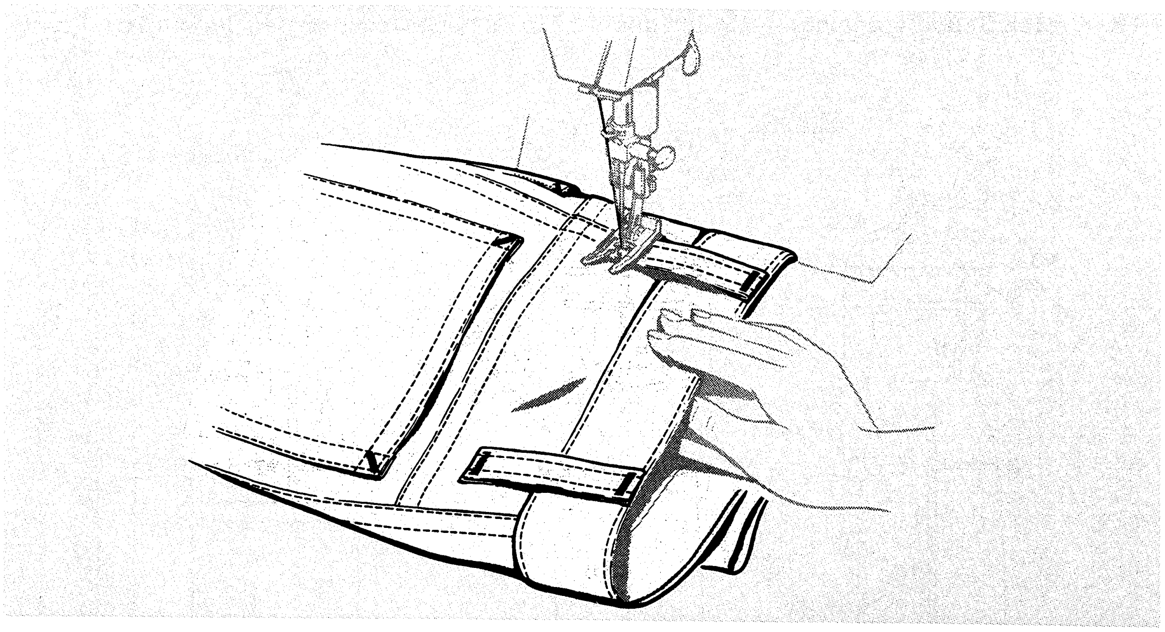
The free-arm surface makes it easy to finish sleeves, pant legs and waistlines. These circular garment areas rotate smoothly around the sewing surface, giving you full visibility and control as you blindstitch hems, attach elastic, or topstitch cuffs.

DARNING AND MENDING



Knees, elbows and other areas of wear in children's clothes, sweaters, jackets and shorts become readily accessible for darning, mending or patching when the free-arm surface is used. The sewing surface fits inside the enclosed sleeve and leg areas, making it unnecessary to open seams or roll the garment. For darning, follow the instructions on page 47 and refer to page 45 for mending information.

BAR TACKS



Bar tacks reinforce areas of strain and can be applied to ready-made garments, as well as to those sewn at home. Use the free-arm surface to avoid fabric bulk around the needle when you apply this detail to pockets, plackets, and waistlines.

your personal measurements

This chart will enable you to keep a record of your measurements. You will need the assistance of someone to help you to take the measurements carefully with an accurate tape measure.

The illustrations show where tape measure should be placed when taking each measurement.

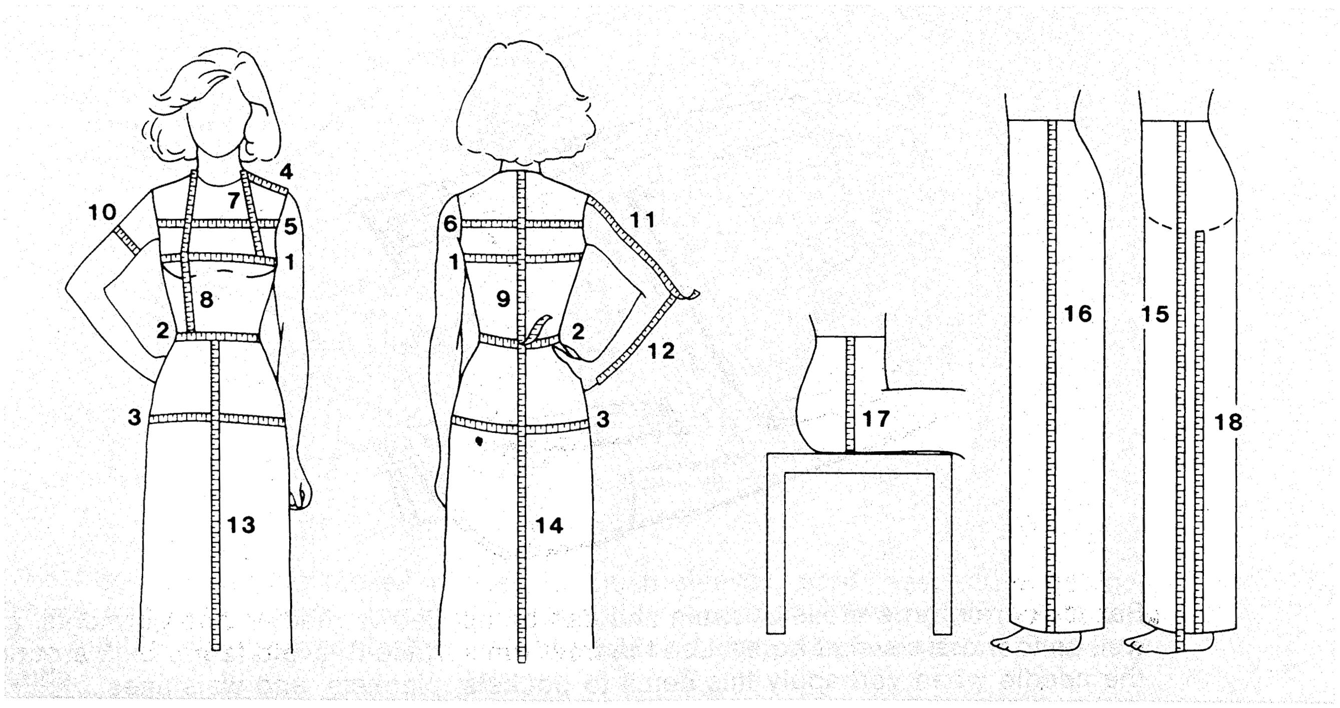
As a starting point, use a ribbon firmly but comfortably tied at the waist before taking measurements.

inches (cm)

1. **Bust** — Fullest part — slightly higher in back .... ________ ______
2. **Waist** — Around natural waistline .... ________ ______
3. **Hip** — ....inches (cm) below natural waistline (fullest part) .... ________ ______
4. **Shoulder** — From base of neck to top of arm .... ________ ______
5. **Front Bodice Width** — From arm hole to arm hole 5 inches (13cm) down from center shoulder .... ________ ______
6. **Back Bodice Width** — From arm hole to arm hole 4 inches (10cm) down from center shoulder .... ________ ______
7. **Shoulder to Bust** — From neck base at shoulder to point of bust .... ________ ______
8. **Front Waist Length** — From neck base at shoulder over fullest part of bust to waistline ________ ______
9. **Back Waist Length** — From the prominent bone at base of neck to natural waistline ... ________ ______
10. **Sleeve Width** — Around arm at upper edge of underarm seam .... ________ ______
11. **Sleeve Length** — Shoulder to elbow .... ________ ______
12. **Sleeve Elbow to Wrist** .... ________ ______
13. **Front Skirt Length** — Down center from waistline to hem .... ________ ______
14. **Back Skirt Length** — Down center from waistline to hem .... ________ ______

PANTS MEASUREMENT CHART

15. **Full Length** — Waist to floor at side seam .... ________ ______
16. **Pant Length** — Waist to ankle .... ________ ______
17. **Crotch Depth (seated)** — Waist to chair at side seam .... ________ ______
18. **Crotch Seam (standing)** — Crotch depth 17 to be deducted from pant length 16 ...... ________ ______



8. CARING FOR YOUR SEWING MACHINE

cleaning the machine

Your machine will serve you perfectly for many years if you take a few moments of your time to keep it clean. How often you will need to clean the machine will depend on how often you use it.

CAUTION: *Before cleaning your machine, disconnect power-line plug from electrical supply.*

Remove lint or fluff from exposed parts. With a soft cloth, clean:

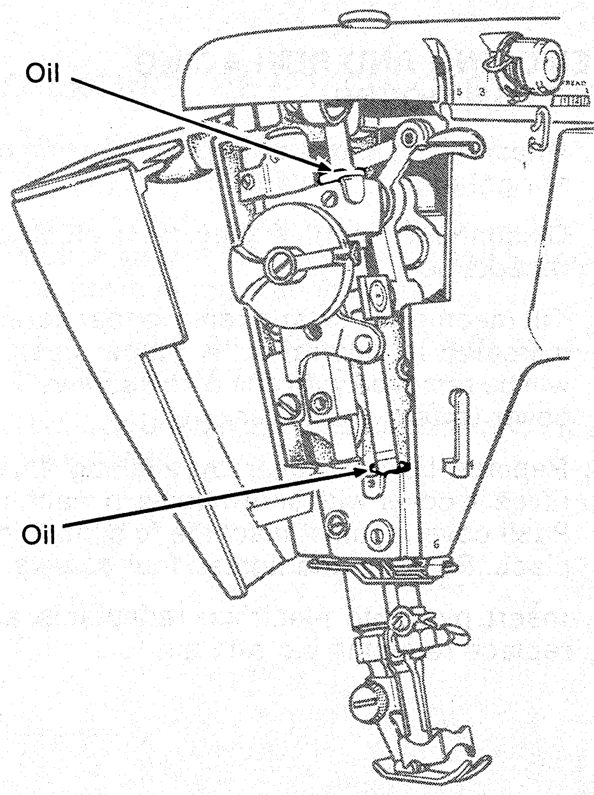
- Tension discs, presser bar, and needle bar
- Take-up lever and thread guides
- Bobbin case (If there is a lot of lint in the area, remove bobbin case for cleaning. See page 55 for instructions).
- Machine surface (If necessary, dampen the cloth and use a mild soap).

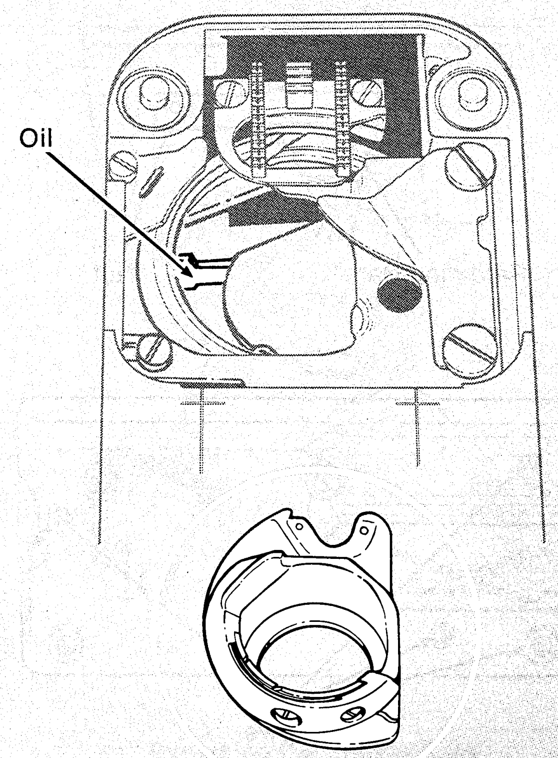
Unlock and open the face plate as instructed on page 6, and clean area behind it with a brush.

Remove needle plate as instructed on page 7 and, using a brush, clean the rotating hook area under the needle plate and slide plate.

After cleaning, apply only SINGER * oil at points indicated below. SINGER oil is specially prepared and does not contain harmful deposits that can interfere with the smooth action of precision parts.

Approximately once every year, remove top and bottom covers as instructed on page 54, and clean and lubricate all moving or rotating machine connections to ensure freedom of movement and to protect metal parts from excessive wear. To determine which connections are moving or rotating, turn hand wheel slowly (by hand) while covers are removed.

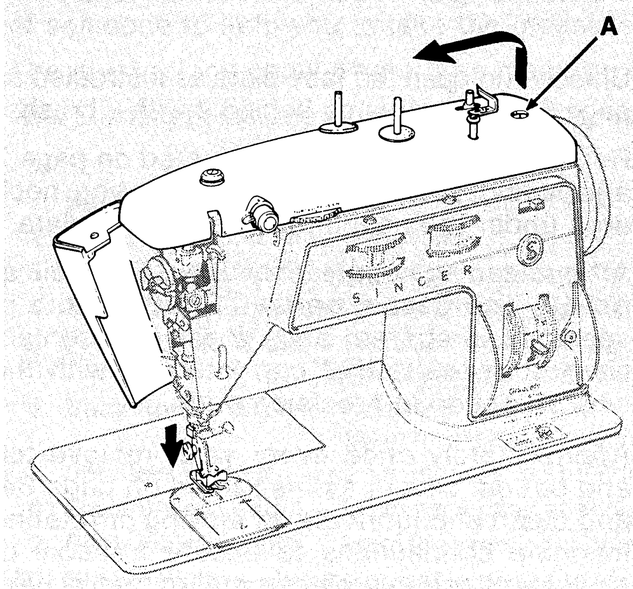




removing covers, bobbin case, and bulb

CAUTION: *Before removing covers, bobbin case, and light bulb, disconnect power-line plug from your electrical supply.*

REMOVING AND REPLACING TOP COVER

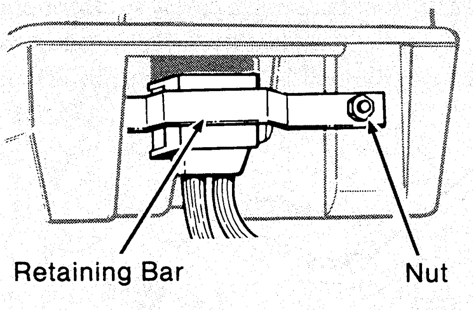


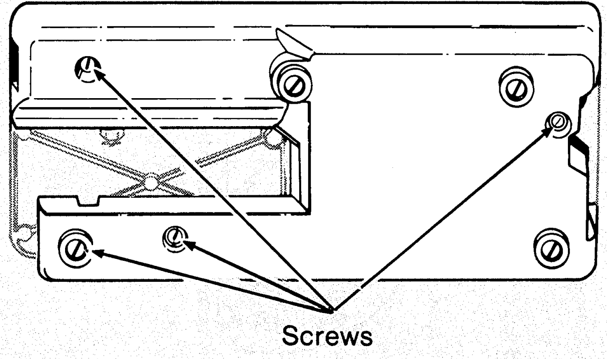
Removing and Replacing Top Cover

Move take-up lever to a low point and lower the presser-foot.

1. Unlock and open face plate as instructed on page 6.
2. Loosen and remove screw **A**, lift up right end of top cover, and slide cover toward left and off machine.
3. Replace cover by positioning it on top of arm with a *slight* overhang on left side.
4. Be sure bobbin winder spindle is disengaged (move it to the left) and slide cover to the right *as far as it will go.* Replace and securely tighten screw **A**.

REMOVING AND REPLACING BOTTOM COVER



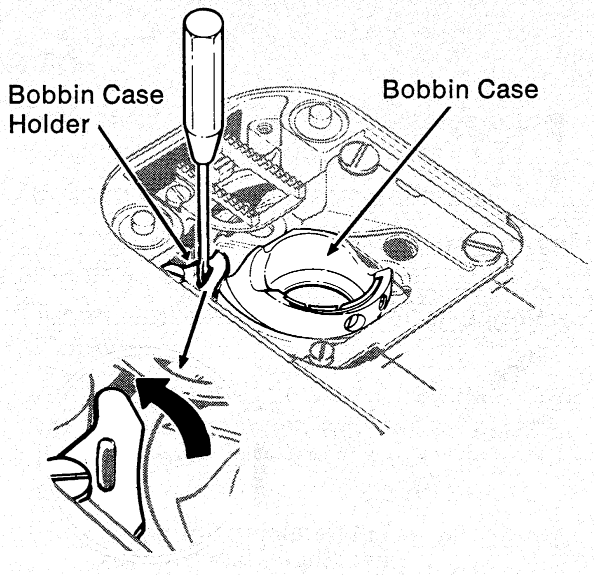


Removing and Replacing Bottom Cover

1. Unscrew nut and remove plug retaining bar at right end of machine.
2. Disconnect machine plug from electrical receptacle.
3. Tilt machine back and remove four screws indicated in illustration. A rubber cushion will be removed with one of the screws. Pull cover toward you to remove.
4. Replace bottom cover by aligning screw holes in cover with screw holes in machine. Push cover against machine to snap it into place. Replace and tighten four screws.
5. Insert plug into electrical receptacle and replace retaining bar and nut.

REMOVING THE BOBBIN CASE

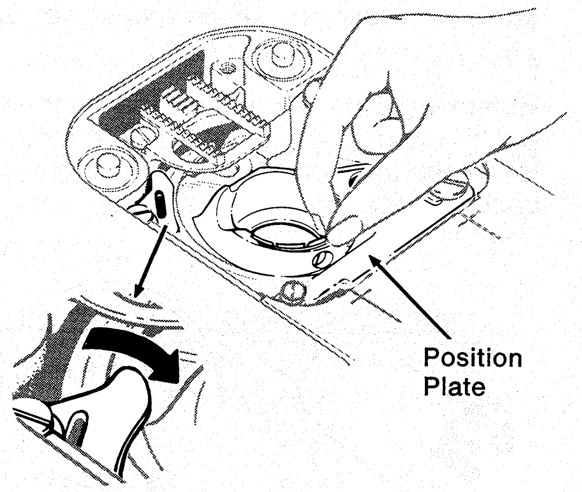
1. Turn hand wheel toward you to raise take-up lever to its highest position.
2. Open slide plate, remove needle plate (see page 7 for instructions), and remove bobbin.
3. Turn bobbin case holder to back as far as it will go.
4. Lift out bobbin case.



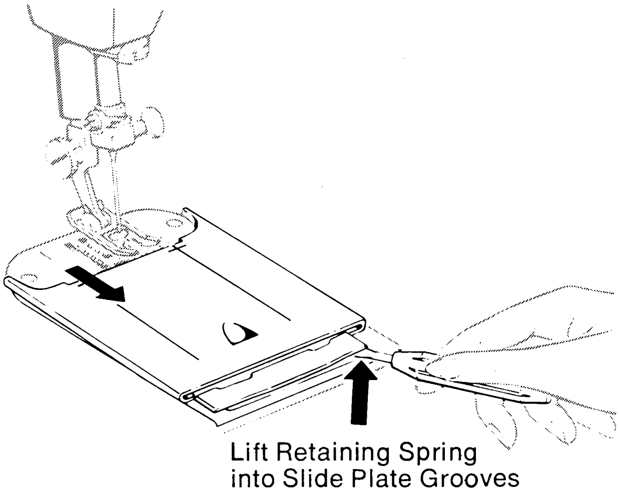
Removing the Bobbin Case

REPLACING THE BOBBIN CASE

1. Turn hand wheel to raise take-up lever to its highest position.
2. Insert bobbin case with a back-and-forth motion so that the front of the case is under the position plate as illustrated.
3. Turn holder all the way forward to lock bobbin case in position.
4. Replace bobbin and needle plate and close slide plate.



Replacing the Bobbin Case



Replacing the Slide Plate

REPLACING THE SLIDE PLATE

You will not have any occasion to remove the slide plate. However, if it should accidentally become disengaged from the machine, it is easily replaced.

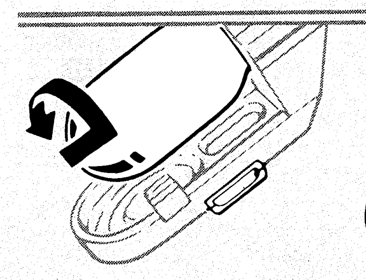
- Raise the presser foot and make sure needle is in its highest position.
- Place slide plate in slide way with the front edge close to, but not covering, the retaining spring (as shown).
- With a small screwdriver, lift each end of the spring into each of the side grooves on the underside of the plate.
- Draw the plate gently toward you and fully engage the spring.
- Close slide plate.

CHANGING THE LIGHT BULB

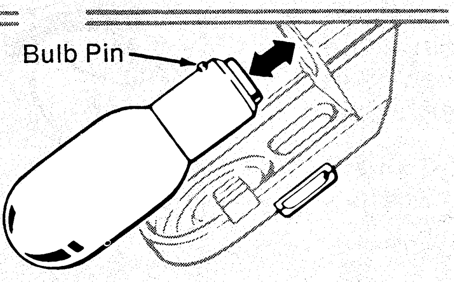
Caution: *Before changing light bulb make sure you have disconnected power-line plug from electrical outlet.*

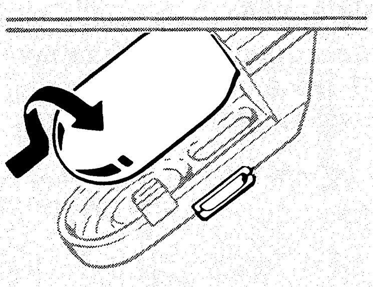
Removing Bulb. With thumb of right hand, push in and down on tab of light lens and lower the light bracket. *Do not attempt to unscrew the bulb.* Press it up into the socket and at the same time turn bulb over in direction shown to unlock the bulb pin.

Replacing Bulb. Press new bulb into socket, with bulb pin entering slot of socket, and turn it over in direction shown to lock bulb in position. Push entire assembly up until it snaps in position.



Unlocks





Locks

performance checklist

REMEMBER TO

- Make sure electrical plug is properly connected.
- Turn on power and light switch.
- Turn hand wheel toward you to raise needle above fabric or needle plate before making adjustments to stitch width or needle position.
- Use a ball-point *Yellow Band* needle to sew nylon tricot and synthetic double-knits.
- Use high-lift presser bar setting to place heavy fabric under presser foot.
- Start and finish sewing with take-up lever in its highest position.
- Adjust stitch length, pressure, and thread tension to suit your fabric.
- Test stitch on a fabric sample before starting a sewing job.
- Replace bent or burred needles.
- Lower presser foot before setting pressure dial.
- Tighten hand-wheel knob after winding a bobbin.
- Use the general purpose needle plate and general purpose foot for all zig-zag stitching, and for straight stitching in **L** (left) or **R** (right) needle positions.
- Remove feed cover plate after button sewing and after free-motion darning or embroidery.
- Sew at a moderate speed (**SLOW** speed setting) when using the straight stretch stitch or *Flexi-Stitch* patterns.

IF THREAD BREAKS

- Is the machine properly threaded?
- Is the bobbin case properly threaded?
- Is thread unwinding freely from spool?
- Is the needle securely tightened in the needle clamp?
- Is the needle straight?
- Is the thread suitable for the size of the needle and free of irregularities?
- Is the spool-pin felt being used under the thread spool?
- Is the needle-thread tension too tight?
- Is the bobbin-thread tension too tight?
- Is the bobbin-case area free of lint and loose thread ends?
- Are the thread guides and tension discs also free of lint?

IF FABRIC FAILS TO FEED

- Is the presser foot down?
- Is pressure dial adjusted properly for the weight and texture of your fabric?
- Is the stitch control dial properly set?
- Are you using the feed cover plate instead of the regular needle plate?

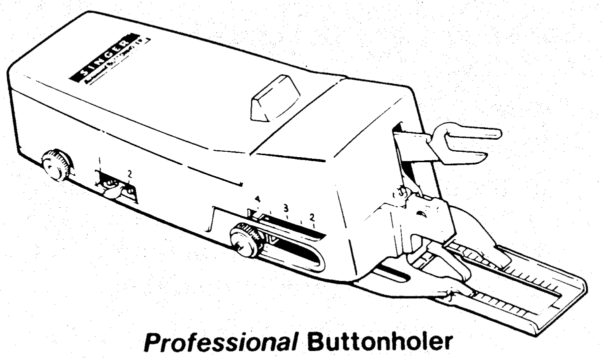
Enjoy Sewing

If you have any questions, please write to:
The Singer Company
Consumer Affairs Department
321 First Street, Elizabeth, N.J. 07207

9. SEWING AIDS

special accessories for special jobs

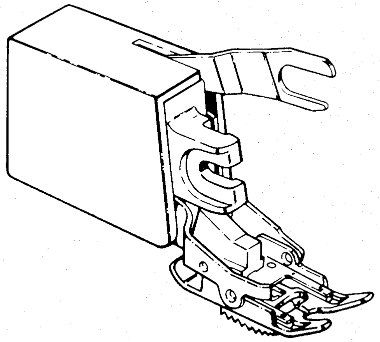
Sewing Aids have been designed to increase the versatility of your sewing machine and enable you to give your sewing that extra professional touch. The ones described below are just a few of the complete selection available at your local Singer Sewing Center.



Professional Buttonholer

*Professional** Buttonholer No. 381116

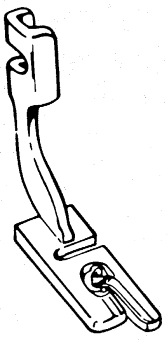
The Professional Buttonholer sews six kinds of buttonholes, plus eyelets in a wide variety of fabrics. You choose the style and length and make perfect buttonholes every time.



Even Feed Foot

Even Feed Foot No. 506415

The Even Feed Foot is effective in keeping fabric piles even, and in matching plaids, stripes, and patterns. It is an invaluable aid for sewing hard-to-feed vinyl and fake fur, pile, stretch, bonded and laminated fabrics. Ideal for topstitching.



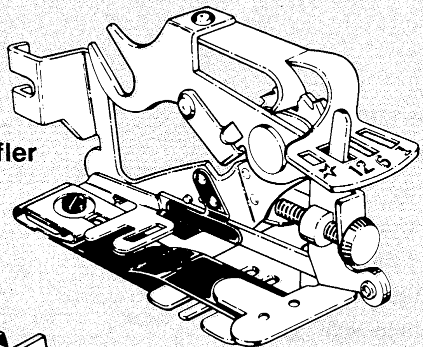
Hemmer Foot

Hemmer Foot No. 171145

Narrow hems can be turned and stitched in a single operation if you use the hemmer foot. Thus, you can eliminate basting or pinning whenever you are making ruffle edges, lingerie finishes, and the like.

Ruffler No. 161561

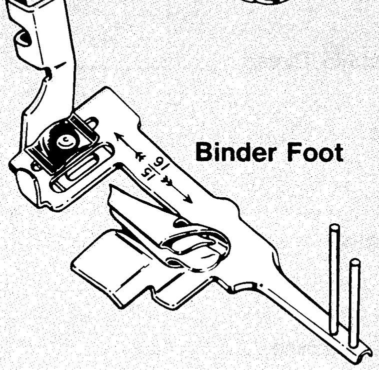
This accessory offers a simple, effective way to make gathered and pleated ruffles. The ruffler is used for straight stitching only.



Ruffler

Binder Foot No. 81200

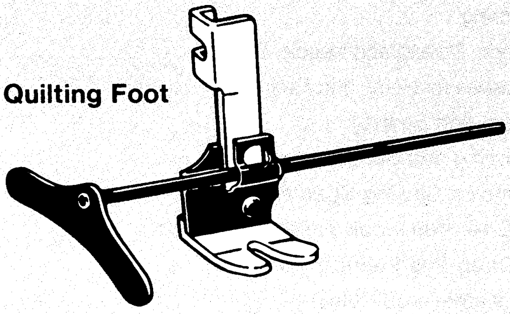
The binder foot is used to apply ready-made bias tape or unfolded bias binding to an unfinished edge. It can also be useful for binding seam edges that might ravel.



Binder Foot

Quilting Foot No. 160691

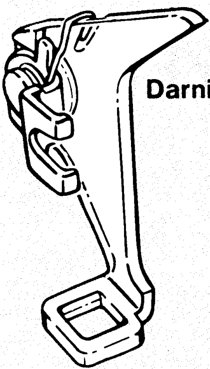
The quilting foot is especially well adapted to stitching lightly padded fabrics. It is excellent for the placement of straight stitching in block, floral, or scroll designs. This short, open foot permits following curved lines with ease and accuracy.



Quilting Foot

Darning and Embroidery Foot No.161875

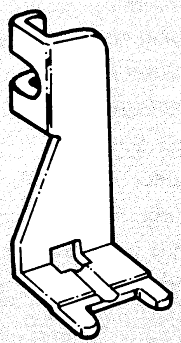
This foot is recommended for all types of free-motion work. It is ideal for embroidery, monogramming, and decorative designs because the transparent toe fully reveals the line of the design to be followed.



Darning and Embroidery Foot

Button Sewing Foot No. 161168

This short, open foot holds any two-hole or four-hole button securely for stitching. The groove in the foot can be used to hold a needle, over which a thread shank can be formed.



Button Sewing Foot

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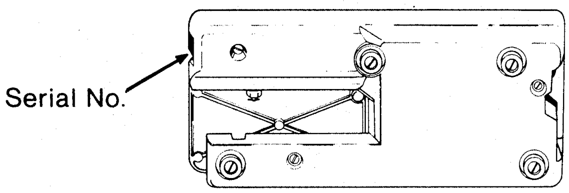
Form 21721 (578)
Part No. 173239

Dear Customer:

We recommend that for future reference you record the serial number of your Sewing Machine in the space provided.

Refer to illustration at right for location of serial number on your machine.



Serial No...

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the complete guide to sewing